POLICY RESEARCH WORKING PAPER 1341

Explaining Pakistan's High Growth Performance Over the Past Two Decades

Can It Be Sustained?

Sadiq Ahmed

Pakistan's 6 percent annual growth rate sustained for two decades has been a development puzzle. What factors explain Pakistan's rapid growth? And can it be sustained if Pakistan does not address problems of high fiscal and current account deficits, relatively low savings and investment rates, and poor human capital formation?

The World Bank
South Asia Country Department III
Office of the Director
August 1994

POLICY RESEARCH WORKING PAPER 1341

Summary findings

Using standard statistical growth analysis, Ahmed shows that Pakistan's growth is the result of:

- Rapid capital accumulation. Pakistan's investment rate was relatively low but its fixed investment rate grew steadily in the 1970s, stabilizing at about 17 percent of GDP in the mid-1980s.
- Growth of the labor force, which offset a tendency toward capital intensity of production.
- More competition from external trade.
- A policy of economic liberalization since 1978.

Pakistan was able to sustain high growth and avoid a financial crisis — despite large deficits — because real interest rates on debts were substantially negative in the 1970s, so debt-to-GDP ratios continued to decline. But real interest rates turned positive in the 1980s. If Pakistan continues to have fiscal deficits of the same magnitude as in the past, a financial crisis will quickly emerge. Pakistan cannot avoid a debt crisis by creating money. Higher inflation will hurt resource allocation and income distribution.

To guard against reduced growth, weakened export performance, and higher real interest rates, Pakistan should reduce its fiscal deficit to below 4.5–5 percent of GDP and phase out quasi-fiscal deficits.

Pakistan needs more balanced use of fiscal, monetary, and exchange rate policies. Putting the burden of external adjustment fully on the real exchange rate, as Pakistan tried to do in the past, is inconsistent with improvements in external balance. Real exchange rate depreciation imposes capital losses on the stock of external debt. The real exchange rate should be set at an appropriate level, and monetary and fiscal policies should be used to adjust demand.

A substantial adjustment effort will be needed to increase domestic savings and investment rates. National savings should increase from 14 percent of GDP to 20–22 percent of GDP. Raising public revenues and reducing public consumption will achieve public savings of 3–4 percent of GDP (savings are negative now). Public investment should focus on areas (such as physical infrastructure and human development) that promote private investment, economic growth, and equity.

To contain the fiscal cost of domestic borrowing, Pakistan has pursued a policy of financial repression, which has repressed the private credit and investment needed for long-term growth. Also needed is more rapid progress in human capital development, especially investments in women's health and education. To compete internationally in manufacturing requires more skilled production and a better-educated workforce than Pakistan has had.

This paper — a product of the Office of the Director, South Asia Country Department III — is part of a larger effort in the department to analyze the nature and extent of the adjustment challenges faced by Pakistan in the 1990s. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Ann Bhalla, room D10-071, extension 84440 (47 pages). August 1994.

EXPLAINING PAKISTAN'S HIGH GROWTH PERFORMANCE OVER THE PAST TWO DECADES: CAN IT BE SUSTAINED?

By

SADIQ AHMED *

---

* I am grateful to Fan Xu (summer intern) for research assistance and to Ann Bhalla (senior staff assistant) for help with processing this document. The initial draft was widely circulated and commented upon. The present version was revised in light of those comments. I am grateful in particular to Paul Isenman, Gobind Nankani, Ishrat Husain, Mohamed El-Erian, Nadeem ul Haque, Akbar Noman and Rui Coutinho for very helpful comments.

Table of Contents

SUMMARY

Pakistan's 6.0% p.a. growth rate over the past two decades has been considered by some as a "development puzzle" because this growth performance has been accompanied by three major disconcerting factors--high fiscal and current account deficits, relatively low savings and investment rates, and poor human capital formation. What factors explain Pakistan's rapid growth? And, can Pakistan sustain this high rate of growth in the future without first addressing the three disconcerting factors noted above?

Using a standard statistical growth analysis, the paper shows that, consistent with the predictions of economic theory, the main determinants of growth have been: a rapid pace of physical capital accumulation, the positive contribution of labor force growth, greater competition from external trade, and a policy of economic liberalization since 1978. Although Pakistan's investment rate remains low by international standards, the fixed investment rate grew steadily during the 1970s and then stabilized at around 17% of GDP p.a. since the mid-1980s. This allowed the capital stock, economy-wide and in the manufacturing sector, to expand fairly rapidly which in turn supported a substantial increase in the capital labor ratios and average labor productivity. Although a rapidly growing population with low skills coupled with a tendency towards greater capital intensity of production weakened the contribution of labor in explaining growth especially in the manufacturing sector, the expansion of labor force remained a significant determinant of overall output growth. The growth impact of these traditional factors was augmented by improvements in total factor productivity resulting from greater trade and other economic liberalization that has happened in Pakistan since 1978.

The sustainability of this high growth performance over the medium-to-longer term in the future is, however, doubtful. In the past, the main reason why Pakistan was able to sustain high growth and avoid a financial crisis in the face of large fiscal and balance of payments deficits was that the real interest rates on both external and domestic debts were substantially negative during the 1970s. As a result, debt to GDP ratios continued to decline despite large fiscal and current account deficits. However, real interest rates turned positive during the 1980s. So, even though on average fiscal and current account deficits were lower in the 1980s, the interest burden of the domestic and external debts have increased significantly. The outlook for the 1990s is that both foreign and domestic real interest rates will remain significantly positive. In this situation, if Pakistan were to continue to run fiscal deficits of the same magnitude as in the past, a financial crisis is likely to emerge pretty rapidly.

It is not possible to avoid a "debt crisis" by funding large fiscal deficits through money creation. The analysis of this paper shows that Pakistan's inflation target of 5% p.a. is consistent with "inflation tax revenue" in the 2-2.5% of GDP range. The revenue would reach a maximum of 3-3.2% of GDP with an inflation rate of 20% p.a. A further acceleration of inflation will cut the "inflation tax base" (real money balances) pretty rapidly so that the revenue proceeds from inflation will actually fall. Even trying to generate the maximum revenue of 3-3.2% of GDP from higher inflation tax (20%) is unwise. The adverse effects of this higher inflation on resource allocation and income distribution can be quite severe.

Using a macroeconomic consistency framework, the paper derives estimates of sustainable current account deficits (i.e. deficits that do not worsen external creditworthiness) in the range of

3% of GDP p.a. Consistent with this and the Government's inflation target of 5% p.a., the sustainable fiscal deficits are in the range of 4.5-5% of GDP p.a. (Note that the definition of fiscal deficit corresponds to overall public sector borrowing requirement and not the central government budget deficits). It is important to note that the fiscal deficits in the 4.5-5% of GDP range are sustainable in the sense that such deficits are consistent with other macroeconomic targets/variables (GDP growth, export growth, real interest rate and inflation). If these targets/variables change, the level of sustainable fiscal deficit will also change. In particular, external shocks could reduce growth, weaken export performance and raise real interest rates. To guard against these risks, a prudent policy stance would be to aim for an even lower fiscal deficit than 4.5-5.0% of GDP. The paper also emphasizes the need to phase out "quasi-fiscal deficits", resulting from State Bank of Pakistan's transactions with the private sector, in order to ensure that revenues from seignorage are actually available to finance the ordinary fiscal deficits and avoid additional domestic borrowing.

The paper suggests the need for a more balanced use of fiscal, monetary and exchange rate policies. Putting the burden of external adjustment fully on the real exchange rate, as Pakistan has attempted since the mid-1980s, is inconsistent with improvements in external and internal balance. This is not only because fiscal deficits continue to put pressure on internal and external deficits but also because a real exchange rate depreciation imposes capital losses on the stock of external debt. A balanced policy stance involves setting the real exchange rate at its appropriate level and using monetary and fiscal policies to adjust aggregate demand.

Given the need to reduce macroeconomic imbalances, the paper also concludes that a substantial adjustment effort will be needed to raise domestic saving and investment in order to ensure the consistency of these macroeconomic targets with the growth target. The need, particularly is to raise the national saving rate from 14% of GDP presently to 20-22% of GDP. This, in turn, will require a substantial fiscal adjustment which will raise public revenues and reduce public consumption to achieve a public saving rate of 3-4% of GDP, as compared with negative savings presently. A similar adjustment in public capital spending will be necessary to ensure that public investment is focussed on areas that promote private investment, economic growth and equity—e.g. physical infrastructure and human development.

Lower fiscal deficits will also help reconcile the need for greater financial resource mobilization with the objective of stimulating private investment. A large part of the domestic financing of the fiscal deficits has come from borrowing from the private sector. To contain the fiscal cost of domestic borrowings, Pakistan has followed a policy of financial repression for a fairly long period. The opportunity cost of this policy has been reduced financial resource mobilization and repressed private credit and investment. As Pakistan proceeds with financial liberalization to facilitate stronger financial intermediation and improved financial resource allocation, the reduction of fiscal deficits will help contain the increase in real interest rates and minimize the disincentive effects of higher real interest rates for private investment.

Finally, the paper argues that Pakistan's ability to sustain high growth rates over the longer terms will also depend upon rapid progress with human capital development. In the first place, human resource development, particularly investment in female education and health, is essential to reduce the high population growth rate. Secondly, the sources of future growth, in terms of types of economic activity, will need to change substantially, as compared with the past, which will require

substantially stronger human capital input. In particular, the reliance on a diversified and dynamic manufacturing sector, which can compete effectively in the international markets, will have to increase. This, in turn, will require a much higher skill-intensity of production and a generally better educated labor force than in the past. The international evidence on the importance of human capital formation for sustained growth performance is indisputable. Pakistan's recent shift in emphasis on this subject, as reflected in the Social Action Program, is evidence that this reality has dawned upon the policy makers. Speedy and effective implementation of this program, however, remains a challenge.

I. INTRODUCTION

1. At 6% p.a., Pakistan's growth performance over the past two decades has been very impressive as compared with most of the developing world, except the high performing economies of the East Asia Region. Although less impressive, this compares favorably in per capita terms as well, even after allowing for Pakistan's very rapid population expansion. Pakistan's growth performance has been considered as a "development puzzle" by some in view of a number of disconcerting factors that has prevailed along with rapid growth. These include: first, despite the high growth rate, Pakistan's social indicators remain strikingly poor -- Pakistan is among the countries with the highest adult illiteracy rate and lowest primary school enrollment ratio; second, while Pakistan has been able to avoid high inflation, its fiscal and balance of payments deficits have been pretty large, contributing to a fairly rapid increase in its domestic and external debt burden; third, notwithstanding progress in mobilizing domestic saving and raising the rate of investment, the saving and investment efforts remain at a relatively low level as compared with most other developing countries of the world; the domestic saving rate, in particular, is strikingly low, falling below the average saving rate for the Africa Region.

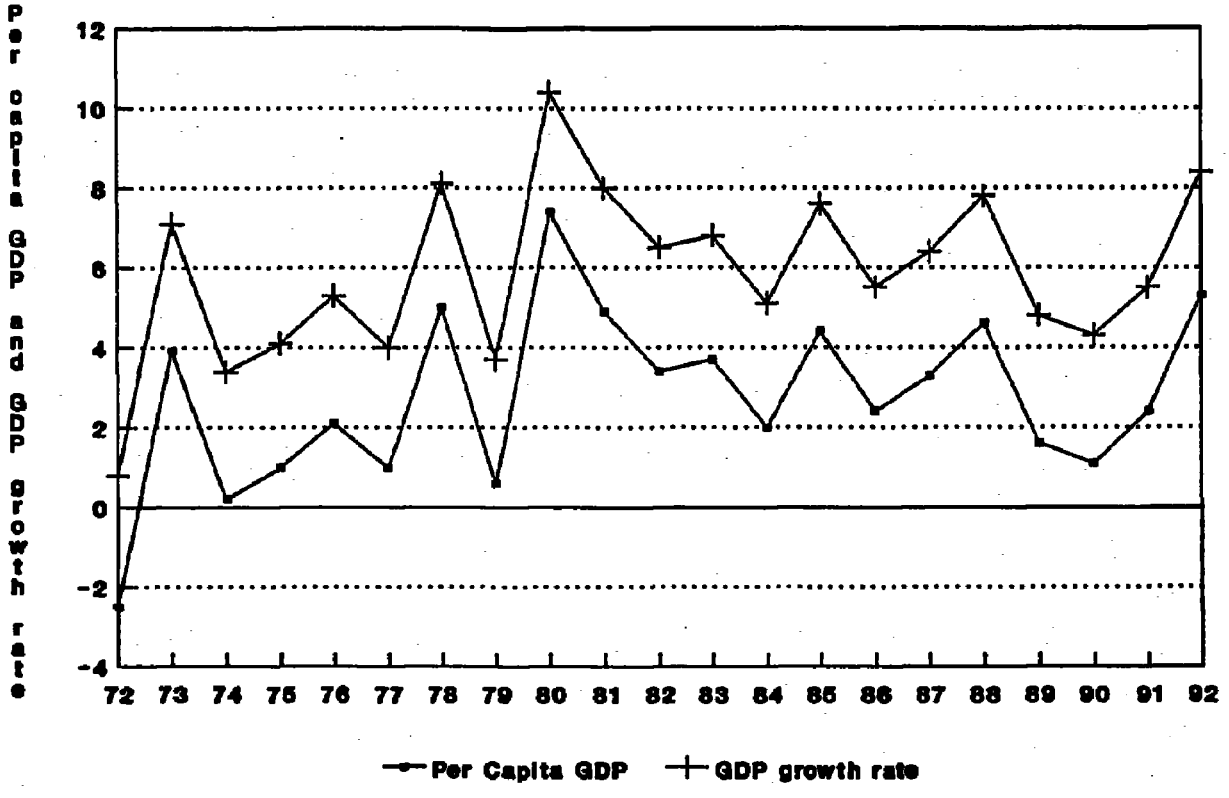
2. What factors explain Pakistan's rapid growth? And can Pakistan sustain this high growth performance in the next 10-20 years without first addressing the three disconcerting factors mentioned above? The objective of this paper is to try to provide some light on these two very important questions. The paper is organized as follows: Section II reviews Pakistan's development performance over the past two decades in terms of a number of key indicators and compares this performance with other developing countries. Section III analyzes statistically the factors that explain Pakistan's past growth performance using a commonly used growth-related analytical framework. Section IV focuses on the question of sustainability of the past growth performance. Considerable attention is given to this question as Pakistan's rapid growth has generated some controversy about the importance of paying attention to the prevailing macroeconomic imbalances. Finally, Section V provides summary and conclusions. A list of cited work is included and selected background data are presented in the Annex.

II. PAKISTAN'S DEVELOPMENT PERFORMANCE OVER THE PAST TWO DECADES -- AN INTERNATIONAL COMPARISON

Economic Growth

3. The trend in the expansion of total and per capita GDP in Pakistan over the past two decades is illustrated in Graph 1. Although the growth path exhibits considerable variation--partly reflecting the fluctuations of agricultural production but also showing the effects of frequent political disturbances--the trend growth for total GDP is estimated at 6.0% per annum, which is a strikingly healthy performance by international standards (see Table 1). A large part of this high output growth, however, is spent simply on sustaining a very high pace of population expansion (3.1% p.a.). Even so, at around 3% p.a., Pakistan's per capita income growth compares favorably with most other developing countries of the world (see Table 2).

Graph 1
Pakistan -- Growth of GDP and Per Capita GDP



Social Development

4. The significant growth in per capita income coupled with inflows of remittances enabled a modest growth in per capita consumption (see Table 3). This in turn allowed a reduction in the number of people living in absolute poverty as measured in income terms (see Malik (1994)[1].

5. High growth, however, did not translate into sharp improvements in the quality of life. There is also a concern that the income distribution may have worsened.[2] Thus, along with high growth, an equally striking result is the rather dismal performance in terms of social indicators.

---

[1] There is substantial debate on the question of the incidence of poverty and its regional distribution. Further work is undergoing in the Bank to try to resolve some of the debate arising from data and methodology. Few, however, doubt the conclusion that absolute poverty measured in income terms has been declining in Pakistan.

[2] See Economic Survey, 1992-93, Ministry of Finance (1993).

Table 1. Growth in Pakistan's GDP - An International Comparison

	1970-80	1980-91
Pakistan	4.9	6.1
India	3.4	5.4
Bangladesh	2.3	4.3
Nepal a/	2.1	4.7
Sri Lanka	4.1	4.0
South Asia	3.5	5.4
East Asia and Pacific	6.6	7.7
Latin America and the Caribbean	5.5	1.7
Middle East and North Africa	5.2	2.1
Sub-Saharan Africa	4.0	2.1
World	3.5	3.0

a/ Estimated from World Tables 1993.

Source: WDR, 1993.

Table 2. Growth in Pakistan's GDP Per Capita - An International Comparison

	1970-80	1980-91
Pakistan	1.8	3.0
India	1.1	3.3
Bangladesh	-0.4	2.1
Nepal a/	-0.2	2.2
Sri Lanka	2.4	2.6
South Asia	1.1	3.2
East Asia and Pacific	4.8	6.1
Latin America and the Caribbean	2.2	-0.3
Middle East and North Africa	1.7	-1.1
Sub-Saharan Africa	0.9	-1.0
World	1.6	1.3

a/ Estimated from World Tables 1993.

Source: WDR, 1993.

Table 3. Growth in Pakistan's Per Capita Consumption - An International Comparison

	1970-80	1980-91
Pakistan	1.1	1.6
India	0.6	3.2
Bangladesh	-0.4	1.4
Nepal a/	3.2	2.2
Sri Lanka	--	--
South Asia	0.6	2.9
East Asia and Pacific	3.9	4.9
Latin America and the Caribbean	3.1	-0.6
Middle East and North Africa	--	--
Sub-Saharan Africa	2.3	-2.4
World	1.6	1.3

a/ Estimated from World Tables 1993.
Source: WDR, 1993.

Although some progress was made in raising life expectancy, reducing infant mortality, and increasing adult literacy, Pakistan's performance still compares poorly with other developing countries (see Table 4). For example, the infant mortality rate remains above the average for all other regions of the developing world except Africa. Pakistan's adult illiteracy rate is amongst the highest in the world, exceeding the average in all other regions. Perhaps the most disappointing situation is regarding schooling achievement. Pakistan's primary school enrollment ratio is substantially below the average for any other region in the world. Moreover, there is substantial discrimination against female education.

Macro-balances

6. Pakistan faced significant inflationary pressures in the 1970s, but succeeded in reducing these pressures in the 1980s. Indeed, its average inflation rate during the 1980's was amongst the lowest in the developing countries, only bettered by the East Asia and Pacific Region (see Table 5). Pakistan, however, ran substantial fiscal deficits while the current account balance of payments deficits have also been sizeable. As explained later, while initially these deficits did not pose a financial problem because of negative international and domestic real interest rates, more recently in the 1980 the effects of these fiscal and current account balance of payments deficits have shown up in terms of a growing debt burden. External debt as a share of GDP, for example, grew from 37% in 1981 to 50% in 1992. Domestic debt (excluding transactions with the Central Bank) expanded from 13% in 1981 to 31% in 1992.

Table 4. Pakistan's Social Indicators -- An International Comparison

	Life expectancy at birth		Infant mortality		Adult Illiteracy		Primary enrollment		Secondary enrollment	
	1970	1991	1970	1991	1975	1991	1970	1990	1970	1990
Pakistan	46	59	142	97	79	65	40	37 a/	13	22
India	47	60	137	90	64	52	73	97	26	44
Bangladesh	45	51	140	103	78	65	54	73	--	17
Nepal	41	53	157	101	81	74	26	86	10	30
Sri Lanka	64	71	53	18	17	12	99	107	47	74
South Asia	49	59	138	92	--	54	67	88	25	39
East Asia and Pacific	59	68	76	42	--	24	88	127	24	49
Latin America and the Caribbean	61	68	82	44	--	16	95	107	28	49
Middle East and North Africa	53	64	135	60	--	45	68	97	24	36
Sub-Saharan Africa	43	51	144	104	--	50	46	68	6	17
World	58	66	85	53	--	35	83	104	15	39

-- = Not available.

a/ There is some controversy surrounding this number. Other estimates suggest an improvement in the primary enrollment ratio over 1970.

Source: 1) WDR 1993, 1979
2) World Tables, 1987

Savings and Investments

7. A rapidly expanding economy is usually associated with a high rate of saving and investment. In the case of Pakistan, both saving and investment rates have increased noticeably. For example, the domestic saving rate grew from an average of 7.3% in 1973-76 to 11.5% in 1988-91, while the total investment rate expanded from 14.9% to 18.6% over the same period (see Table 6). Nevertheless, a striking result is that both the saving and investment rates are below the average found in other developing regions except Sub-Saharan Africa. The saving rate is also below that found in Sub-Saharan Africa.

Table 5. Pakistan's Macroeconomic Balances -- An International Comparison

	Inflation rate a/		Govt.'s budget deficit b/		Current Account Deficit b/ c/		External Debt to Exports d/		External Debt to GNP d/	
	1971-80	1981-91	1971-80	1981-91	1971-80	1981-91	1980	1991	1980	1991
Pakistan	13.4	7.0	7.9 e/	7.0	5.5	4.0	208.8	244.9	42.4	50.1
India	8.4	8.2	4.8 f/	7.7 g/	0.5	2.3	136.2	295.3	11.9	29.3
Nepal	8.5	9.1	2.5	7.2	2.7	8.0	85.5	370.0	10.4	53.5
Bangladesh	20.8	9.3	-0.2 f/	0.4 h/	7.8	7.5	345.3	443.7	31.3	56.0
Sri Lanka	12.3	11.2	10.4	9.5	5.4	9.2	123.4	211.0	46.1	72.6
Indonesia	21.5	8.5	2.6	1.2	1.3	3.3	94.2	223.2	28.0	66.4
Malaysia	7.3	1.7	6.0	6.4 g/	0.6	4.0	44.6	53.7	28.0	47.6
Thailand	9.2	3.7	3.4	-0.2	4.2	4.9	96.8	94.9	26.0	39.0
Mexico	18.1	66.5	3.2	8.7 g/	5.7	1.3	259.2	224.1	30.5	36.9
Kenya	10.1	9.2	4.7	4.7	9.4	8.4	167.3	318.4	49.0	89.6
Ghana	35.2	40.0	6.5	3.7	1.8	5.9	116.0	384.5	31.8	66.9
Nigeria	15.2	18.1	5.3	6.4	-0.9	3.8	32.2	257.1	10.1	108.8
Sub-Saharan Africa	13.9	18.4	--	--	--	--	96.6	329.4	28.6	107.9
South Asia	9.7	8.3	--	--	--	--	160.4	287.1	17.0	35.6
East Asia & Pacific	9.1	6.3	--	--	--	--	89.8	96.2	16.9	28.2
Middle East and North Africa	18.8	8.6	--	--	--	--	114.4	185.8	31.0	58.8
Latin America and Caribbean	43.1	208.2	--	--	--	--	195.5	256.0	35.1	41.3
Severely indebted	30.1	189.6	--	--	--	--	176.6	285.9	34.0	46.4

a/ Period average (% p.a.)
b/ Period average (% of GDP) - Defined narrowly as the deficit of the Central Government
c/ Current account before official transfers
d/ End of period; total exports including factor services
e/ 1973-80
f/ 1974-80
g/ 1981-90
h/ 1081-89

Source: WDR 1993 and World Tables 1993, 1991

Table 6. Pakistan's Saving Investment Trends -- An International Comparison

	1973-76			1980-83			1988-91		
	Saving		Total Invest-ment	Saving		Total Invest-ment	Saving		Total Invest-ment
	Dom.	Nat.		Dom.	Nat.		Dom.	Nat.	
Pakistan	7.3	6.1	14.9	8.3	9.9	18.8	11.5	13.8	18.6
India	19.6	20.0	19.9	20.6	21.8	23.6	22.1	22.0	24.3
Nepal	7.7	7.8	11.9	10.1	10.5	18.2	8.1	10.2	20.2
Bangladesh	0.0	0.0	8.2	2.0	1.6	14.9	2.6	2.0	11.7
Sri Lanka	10.7	9.9	15.3	12.0	15.0	18.8	12.6	10.7	22.1
Indonesia	25.7	23.9	22.0	30.4	27.3	27.5	36.1	31.5	34.6
Malaysia	30.4	26.5	27.1	30.6	25.8	29.6	33.3	28.2	30.9
Thailand	23.4	23.7	25.9	20.1	19.1	34.3	29.5	28.2	34.3
Mexico	18.7	14.9	21.3	26.9	23.2	24.6	21.0	17.6	21.7
Kenya	19.4	14.3	22.5	19.0	16.8	24.9	18.8	15.6	23.5
Ghana	11.5	10.4	10.9	3.3	1.8	4.3	7.6	9.0	15.6
Nigeria	26.0	22.9	20.7	16.2	13.1	17.2	22.3	15.1	14.6
Sub-Saharan Africa	20.2	--	19.8	14.2	--	17.9	13.1	--	16.2
South Asia	16.6	--	18.6	17.7	--	22.5	19.3	--	22.8
East Asia & Pacific	27.6	--	27.7	29.2	--	29.7	38.4	--	37.5
Latin America & Caribbean	22.0	--	23.2	22.1	--	21.9	22.7	--	20.3
Middle East & North Africa	29.6	--	25.6	26.1	--	27.2	20.5	--	21.7

Source: World Tables 1993

III. EXPLAINING PAKISTAN'S PAST GROWTH PERFORMANCE

Overview

8. There is a large volume of literature, many of recent origin, that seeks to explain the growth performance of countries using statistical models. Much of the statistical investigation is focussed on explaining differences in per capita growth across countries. The analytical foundation of these studies is usually centered around the debate whether growth can be explained by the neo-classical model that assumes diminishing returns to capital so that economies with low capital to labor ratio will tend to grow faster and per capita income across countries would tend to equalize over time, or whether growth is 'endogenous' in the sense that there are constant or increasing returns to capital allowing rich economies to continue to grow faster than the poorer economies. (See, for example, Rebelo (1991), Barro (1989; 1991), Mankiw, Romer and Weil (1992); Romer (1986); Lucas (1988)).Both models, however, suggest that countries that are accumulating capital and labor at a faster pace will grow more rapidly. And second, they both agree that the pace of accumulation of labor and capital cannot explain all the differences in output growth. The empirical investigation has largely focussed on explaining this residual growth that cannot be accounted for by the rate of expansion of labor and capital. The choice of other explanatory variables has included a measure of 'human capital' and a variety of proxies to represent the influence of government policies (measures of fiscal, monetary, trade, financial and exchange rate policies) and institutional factors including political climate (see, for example, Elias (1990); Barro and Lee (1993), Levine and Renelt (1991); Maddison(1987)). Among the interesting findings are: first, a strong positive role of human capital in explaining growth; and second, a significant relationship between trade policy and growth.

Statistical Analysis

9. In the case of Pakistan, we used a simple relationship that expressed the GDP growth rate as a function of the rate of growth of physical capital, growth of labor, a measure of trade policy and a dummy variable to capture the impact of economic liberalization since 1978. The role of human capital could not be investigated due to the lack of an appropriate time series indicator of human capital. This relationship was estimated with aggregate data over the period 1974-1992 using overall GDP growth rate and the growth rate in the manufacturing sector alternatively as a dependent variable. The best estimates are shown in Tables 7 and 8. Data used for the regressions are contained in the Annex Tables A1 and A2.

Table 7. Determinants of Pakistan's GDP Growth Rate, 1974-1992

	Constant Term	Growth of Capital Stock	Growth of Labor	Measure of trade policy	Structural change dummy
	C	GK	GL(-1) a/	(X+M/GDP)-1 a/	D
Value of coefficient	-35.13	2.50	0.49	0.43	8.00
t-statistic	(-3.24)	(3.79)	(1.89)	(2.60)	(3.35)
Adjusted R^2 = 0.40				AR(1) ρ = 0.396(1.84)	

a/ The best estimates for labor and trade variable appeared with a one period lag.

Table 8. Determinants of Pakistan's Manufacturing Growth Rate, 1974-1992

	Constant Term	Growth of Capital Stock	Growth of Labor	Measure of trade policy	Structural change Summary
	C	GMK(-2) a/	GML(-1) b/	(X+M/GDP)-1 b/	D
Value of coefficient	-9.64	0.31	0.16	0.25	6.27
t-statistic	(-1.31)	(2.36)	(1.41)	(1.23)	(3.82)
Adjusted R^2= 0.65; D.W. = 1.89					

a/ The best estimates of capital appeared with a two-period lag.
b/ The best estimates of labor and trade variable appeared with a one-period lag.

10. The main results of the statistical analysis are as follows:

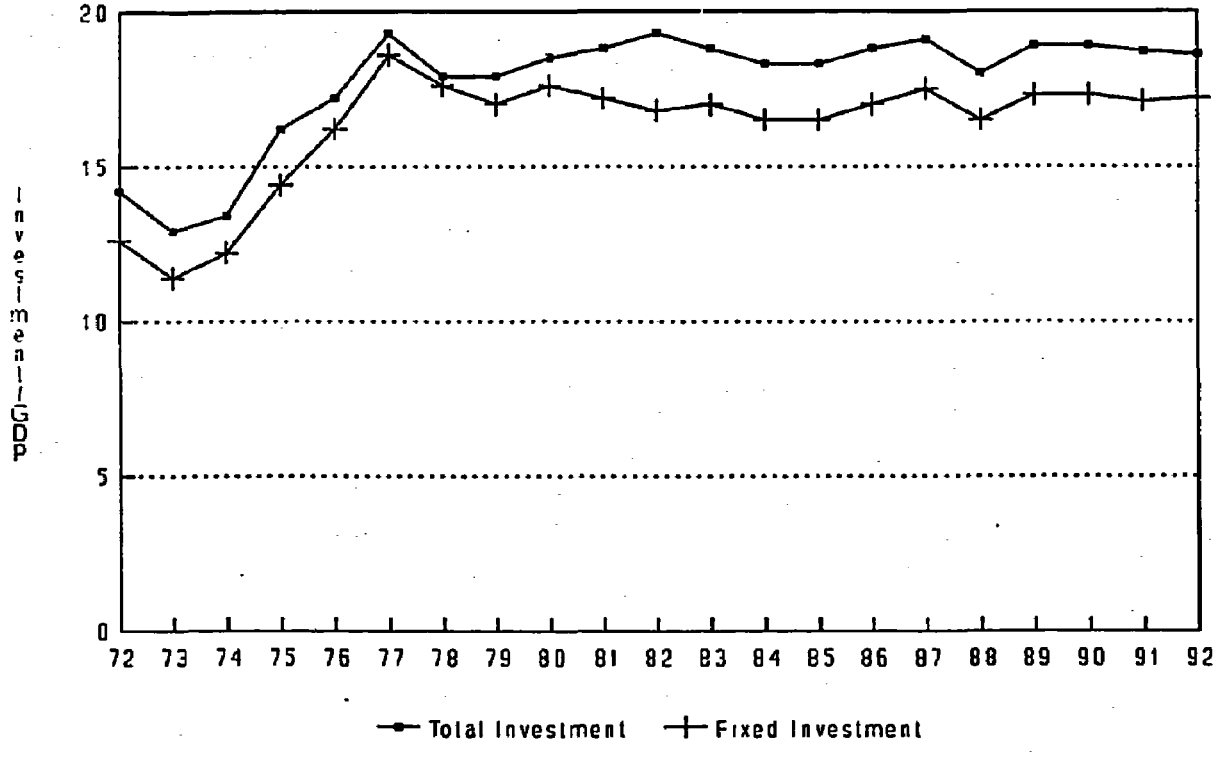
- Physical capital accumulation played a very important role in Pakistan's growth performance--overall and in the manufacturing sector--over the past two decades.
- Labor's contribution to overall growth showed up with the right sign and was also statistically significant at the 5% level. However, in the case of manufacturing, the coefficient was significant only at the 20% level.
- Trade policy, as measured by the ratio of total value of exports and imports to GDP, came up with the right sign and a significant coefficient (at the 5% level) in the case of overall GDP; however, the variable was significant at only the 25% level in the case of growth of manufacturing output[3].
- The structural change dummy, included to capture the impact of the change in the policy regime in Pakistan from the socialist-orientation of the 1972-77 period to the market-oriented economy since 1978, came up with a significant coefficient in both the equations.

Interpretation of the Regression Results

11. The results of the regression analysis are intuitively appealing and consistent with the predictions of economic analysis. Although Pakistan's investment rate remains low by international standards, the total and fixed investment rates grew steadily during the 1970s and then stabilized at around 19% and 17% of GDP respectively in the mid-1980s (see Graph 2). This allowed the capital stock, economy-wide and in the manufacturing sector, to expand fairly rapidly, which in turn supported a substantial increase in the capital labor ratios and labor productivity (see Table 9).

[3] This measure of the openness of trade policy has been frequently used in regression analysis, despite its limitations, because of the ease of construction. More sophisticated indicators, such as the one used by Leamer (1988), are also problematic. See Harrison (1992) for a critical review of the literature on openness and growth.

Graph 2
Pakistan -- Trend in Total and Fixed Investment Rate



12. The relatively weaker statistical significance of the labor coefficient, especially in the manufacturing growth equation, partly reflects the growing capital intensity of production. But it is also an indication that, coloris paribus, population growth is too fast in Pakistan. Labor markets cannot productively absorb such a rapid growth in population, particularly with Pakistan's very low skill levels. The increase in capital intensity could be the effect of two forces at work. First, Pakistan's macroeconomic policies have generally favored greater capital intensity of production, resulting from under-priced capital imports through over-valued exchange rate (well until the mid 1980s), low interest rates and other incentives. Second, external migration of skilled and semi-skilled labor in the 1970s and early 1980s tended to raise real wages (see Irfan and Ahmed (1985)).

13. The positive impact of greater openness to international trade and external competition on aggregate growth is a very important result. Again, this is intuitively appealing and consistent with the findings of other research (see, for example, the East Asia Miracle Study (1993)). The lower statistical significance of the trade variable in the manufacturing regression is rather difficult to explain as, a priori, a large part of the effect of greater efficiency resulting from increased openness should have come from the manufacturing sector.

Table 9. Pakistan: Capital-Output and Capital-Labor Ratios and Per Capita Output, 1972-92
(000' Rs., 1987 prices)

	Overall Economy			Manufacturing		
	K/GDP	K/L	GDP/L	MK/MGDP	MK/ML	MGDP/ML
1972	--	--	--	--	--	12.4
1973	1.37	17.7	12.9	1.33	17.4	13.0
1974	1.42	18.4	13.0	1.33	17.7	13.4
1975	1.47	19.3	13.3	1.46	18.6	12.7
1976	1.53	20.3	13.4	1.70	20.9	12.3
1977	1.61	21.3	13.4	1.89	23.7	12.5
1978	1.61	22.0	13.8	2.01	26.5	13.1
1979	1.67	22.7	13.8	2.13	28.8	13.5
1980	1.64	24.0	14.8	2.18	32.4	14.9
1981	1.62	25.0	15.3	2.34	35.1	15.0
1982	1.62	26.0	15.8	2.19	37.3	17.0
1983	1.62	27.2	16.8	2.18	39.7	18.2
1984	1.64	28.4	17.1	2.15	41.0	19.0
1985	1.63	29.6	18.2	2.10	41.7	19.9
1986	1.65	31.6	19.2	2.07	45.7	22.0
1987	1.66	32.0	19.6	2.03	42.7	21.0
1988	1.63	33.7	20.6	1.94	40.3	25.4
1989	1.66	34.9	21.0	2.00	51.0	25.5
1990	1.70	36.0	21.2	1.97	53.0	27.1
1991	1.71	37.1	22.4	2.00	56.0	27.9
1992	1.70	38.7	23.5	--	--	--

Source: Annex Tables A1 and A2.

Table 10. Contribution of Total Factor Productivity Change to Pakistan's Economic Growth
(% p.a.)

	Average growth of GDP	Average Growth of Capital	Average Growth of Labor	Average TFP change
1973-1977	4.8	8.4	3.5	-1.2
1978-1992	6.4	6.8	2.6	1.6

Source: Growth of labor capital and output are estimated from Annex Table A1. To estimate TFP change, the share of capital was assumed at 0.52 and the share of labor 0.48. These are based on the numbers reported in Burney (1986); an average of the 1969-70-1979-80 period is used.

14. The strong significance of the structural change dummy variable is explained by the major improvement in efficiency resulting from the change in the policy regime from one of intervention during the 1972-77 period toward a more market-oriented one in the following years. The 1972-77 period was marked by a heavily interventionist policy framework with a substantial nationalization of the economy and numerous controls that distorted incentives and reduced efficiency. Many of these distortions were reduced gradually in the subsequent years. A simple growth accounting shows negative total factor productivity (TFP) change during the 1973-77 period as compared with the positive contribution of TFP change to growth in the later periods (see Table 10)[4]. Similar results are also reported by Papanek (1992)).

15. The rather low values of adjusted R^2 suggests that a significant part of the variation in overall and manufacturing growth rates remain unexplained indicating the possibility of missing variables. It could also reflect the uneven quality of the data used in the regression analysis; (see also Box 1). One obvious missing variable is human capital. There is considerable empirical evidence from cross-country analysis that growth and human capital are positively and significantly correlated. However, measuring the impact of this in a time series analysis is not easy as a good proxy to capture the quality aspects of education is not available for Pakistan. The large variance of the growth path, however, also implies that a number of exogenous factors including changes in wealth, political disturbances, external shocks etc., could have played important roles in individual years. While it is possible in principle to capture these effects through dummy variables, this is not done here as the policy implications of these dummy variables is not obvious.

BOX 1. Pakistan's Black Economy

Explaining Pakistan's growth performance is complicated by the presence of what is considered by many a booming black economy. The main activities that feed into this underground economy include: the drug trade and smuggling of goods. There is no firm data on the size of this economy, although estimates have been in the range exceeding US$4.0 billion, or over 9% of GDP. Undeniably, a large black economy creates difficulties for measuring the true size of the underlying economic variables -- GDP, savings, investment, exports and imports. Their levels may well be underestimated by the official data. In particular, savings and investment rates might be higher than implied by official data. How does this complicate the growth analysis? The main implication is that domestic capital formation could be underestimated; so the coefficient of the capital variable would be biased.

[4] There is little evidence of a higher incidence of external shocks or political disturbances in the 1972-1977 period that could account for the difference in productivity.

IV. CAN PAST HIGH GROWTH RATES BE SUSTAINED IN THE MEDIUM-TO-LONGER TERM?

16. The prevalence of the three disconcerting factors mentioned at the beginning of the paper -- large fiscal deficits, relatively low saving and investment rates, and poor human development indicators--has raised doubts whether past growth rates can be sustained in the medium to longer-term without substantially reversing these adverse factors. Let us examine the main concerns in some greater detail.

Fiscal Deficits and Their Implications for Sustained Growth

17. The adverse implications of large fiscal deficits for macroeconomic balances and, therefore, for sustained high rate of economic growth are well known and there is a large body of empirical research that supports these conclusions (see, for example, Buiter and Patel (1992); Easterly and Schmidt-Hebbel (1993); Fischer and Easterly (1990); Sweder van Wijnbergen (1989)). Put in simple language, on the domestic side, large fiscal deficits tend to push up the inflation rate, raise interest rates, and discourage saving and private investment; on the external side, they tend to raise the current account deficit and external indebtedness. These developments in turn constrain the growth performance over the longer turn. Needless to say, none of the results are automatic and how fiscal deficits transmit their effects through the economy depends upon the specific circumstances of the country concerned and the behavior of other policy variables.

Fiscal Deficits and External Balance[5]

18. Pakistan has a long history of running large fiscal deficits. Two obvious consequences of the deficits have been:

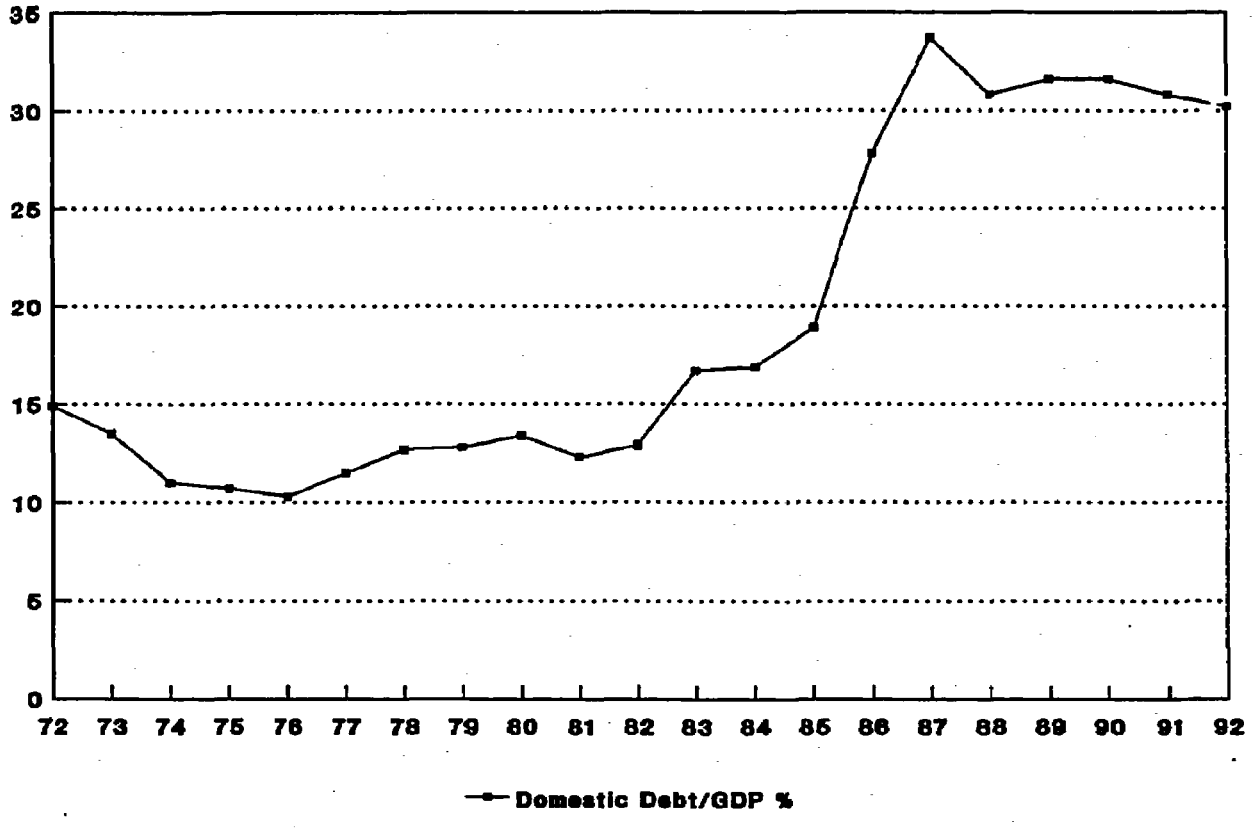
- a large increase in the ratio of domestic debt to GDP since 1974 (see Graph 3); and
- a sharp increase in the interest cost of the budget (see Graph 4)

19. A less obvious but important consequence has been the contribution of these deficits to external imbalances. The relationship between fiscal and current account deficits is indicated in Graph 5, which suggests a strong positive correlation. Statistical investigation also supports the conclusion that fiscal deficits have a strong adverse consequence for deficits in the current account of the balance of payments (results are reported in Table 11).

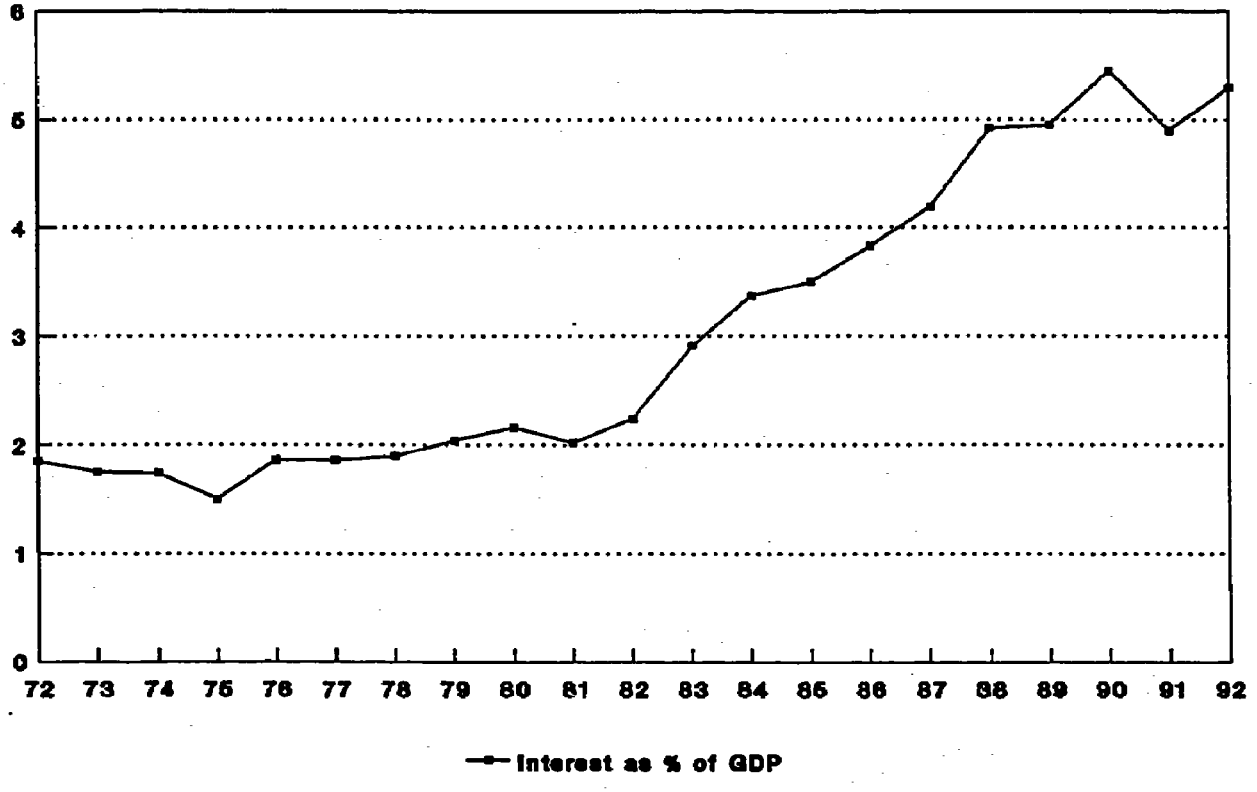
---

[5] It is important to note that in this paper fiscal deficit is defined broadly to correspond to the public sector borrowing requirement. The Government of Pakistan's definition of 'budget deficit' is a subset of this broader definition.

Graph 3
Pakistan -- Domestic Debt to GDP (%)



Graph 4
Pakistan -- Government Interest Payments
as a Percent of GDP



Graph 5
Pakistan -- Trend in Fiscal and Current Account Deficits (% of GDP)

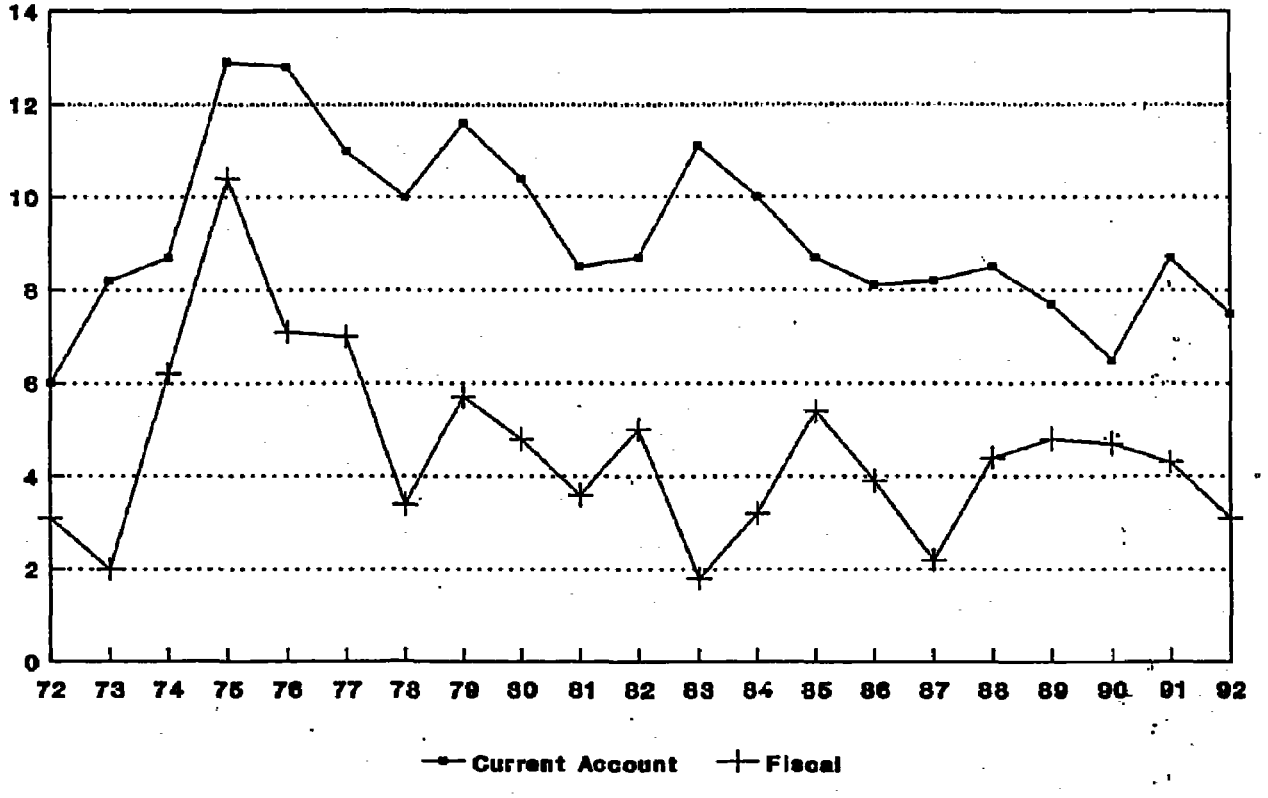


Table 11. Pakistan: Determinant of Current Account Deficits[6], 1972-92

	Terms of Trade (TOT)	Real Exchange Rate (RER)	Fiscal Balance as a share of GDP (FBGDP)	Time Trend (T)
Coefficients	0.077	-0.651	0.767	0.403
T-Statistic	(3.59)	(-3.47)	(5.71)	(3.60)
Adjusted R^2 = 0.63		D.W. = 2.25		

20. What has been the impact on external debt? The trend in external debt to GDP is shown in Graph 6. The graph reveals an interesting pattern. The external debt declined as a share of GDP well upto 1981, but the trend has been sharply reversed since then, rising from a low of around 37% of GDP in 1981 to over 53% in 1991. What explains this pattern? The answer lies in the dynamics of the debt (See Sweder van Wijnbergen (1989)). It can be shown that:

---

[6] The equation estimated took the form:

CABDGP = f(FBGDP, RER, TOT, FRIR, GWI, T)

where: CABGDP = current account balance as a percentage of GDP
FBGDP = fiscal balance as a share of GDP
TOT = External terms of trade
RER = real exchange rate
FRIR = foreign real interest rate
GWI = growth of industrial countries GDP
T = time trend

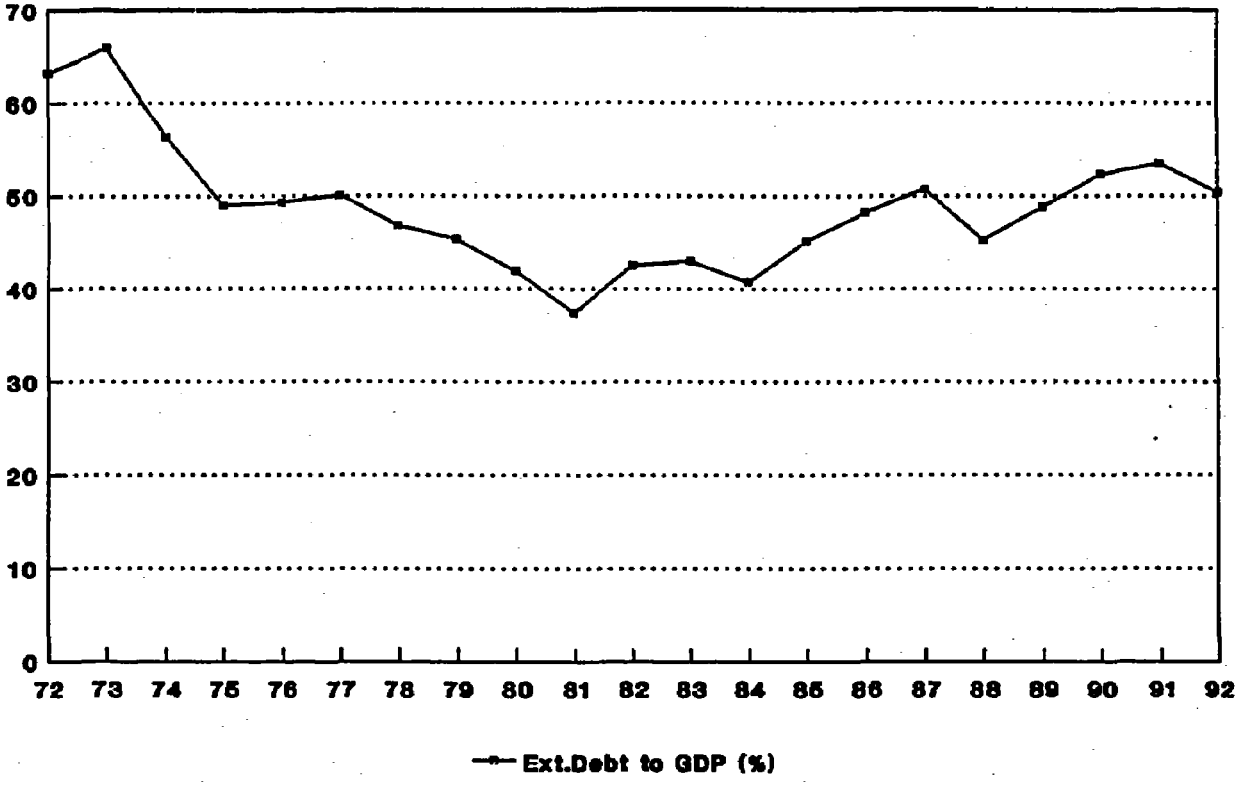
This specification follows Khan and Knight (1983). A priori, we expect TOT, FBGDP, and GWI to be positively related to the current account balance, while RER and FRIR should be negatively related to CURBAL. The full regression, including GWI and FRJR yielded the following results:

CURBAL = 0.062 TOT + 0.722 FBGDP + 0.21 GWI - 0.619 RER - 0.0164 FRIR + 0.389 T
(2.27) (4.88) (0.95) (-2.54) (-0.31) (2.56)

Adjusted R^2=0.53, D.W.=2.11

All coefficients have the right signs but GWI and FRIR failed to show a significant relationship (as indicated by the t-statistic in parenthesis). So, the equation was reestimated without GWI and FRIR and the results are reported in the Table 11 above.

Graph 6
Pakistan -- Trend in External Debt as a Percent of GDP



$$\Delta d = (r - g)\, d - v + \frac{\Delta e}{e} d \qquad (1)$$

where d = debt-output ratio
Δ = change in the debt-output ratio
r = real interest rate on external debt
v = non-interest current account balance as a percentage of GDP.
e = real exchange rate
$\frac{\Delta e}{e}$ = rate of change of real exchange rate
g = real rate of economic growth

Equation (1) states that the change in the external debt to GDP ratio can be traced to three factors: (i) the growth in the ratio due to the excess of the foreign real interest rate over the real growth of GDP ($(r-g)d$); (ii) the non-interest current account balance (v); and (iii) the capital loss on external debt due to real exchange rate depreciation $\left(\frac{\Delta e}{e}\right)$. The contribution of the three factors to the change in the external debt-GDP ratio is shown in Table 12. The main results are as follow:

Table 12. Pakistan: Determinants of External Debt-GDP Ratio, 1973-1991
(%)

	Δd	$(r-g)\,d$	v	$\frac{\Delta e}{e}d$
1973-1981	-28.4	-64.8	-40.3	-3.9
1981-1991	16.1	-26.8	-19.3	23.6

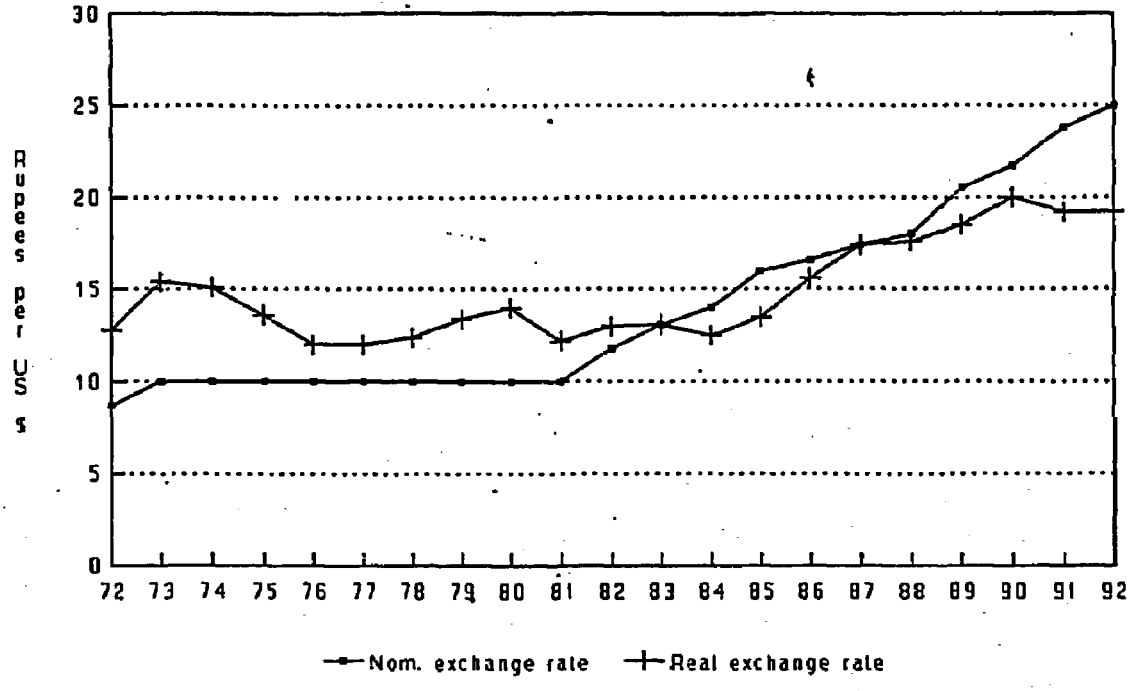
Source: Own estimates.

- Between 1973 and 1981, Pakistan experienced substantial non-interest current account deficits. By itself, this should have contributed significantly to raising the external debt-GDP ratio. However, the ratio declined noticeably because the adverse implication of these deficits was more than offset by the contributions of a large negative external interest rate and the high GDP growth rate[7]. The appreciation of the real exchange rate (see Graph 7) also contributed to reducing the external debt-GDP ratio by causing a capital gain on the stock of real debt, although it tended to raise the ratio on the flow side by worsening the current balance.

- In sharp contrast to the earlier period, between 1981 and 1991, the external debt-GDP ratio increased noticeably, even though the level of non-interest current balance was on average less negative than during 1973-81 and the average growth of GDP was somewhat higher than in the previous period. The external debt to GDP ratio increased partly because the foreign real interest rate turned positive and, as a result, the cushion provided by the large negative "dynamic debt component"--$(r-g)d$--was weakened in this period. Furthermore, while the depreciation of the real exchange rate helped reduce the non-interest current deficits, it also had a substantial offsetting rising impact on the external debt-GDP ratio through its direct effect on capital losses on the stock of debt.

[7] The interest rate is defined as the average interest rate and is derived as the ratio of interest payments to total external debt. The main reason why average nominal interest rates were so low in this period is because of the dominance of official concessional loans in the external debt portfolio.

Graph 7
Pakistan -- Real and Nominal Exchange Rate a/



a/ Note that exchange rate is defined as Rupees per unit of US$. So up means a depreciation.

21. These results, especially the role of international real interest rate, is very important and has strong implications for the sustainable level of current account deficit for the future. For example, if real interest rates in the 1973-81 period were even barely positive (close to zero) the external debt-GDP ratio would have risen by 6 percentage points over the period instead of declining by 28 percentage points. Given the current outlook for international real interest rates (2-3% in real terms), running non-interest current deficits as in the past would quickly put considerable pressure on the external debt-GDP ratio. If real interest rates were to exceed the growth of real GDP for a significant period, the country would move towards external insolvency.

22. The role of real exchange rate changes in the external debt-GDP ratio also merits special attention. The substantial adverse direct effect of the real exchange rate depreciation on external debt-GDP ratio over the 1981-91 period should not be misinterpreted as a case against real depreciation. The real depreciation was necessitated by the need to improve export competitiveness. As noted from the results of Table 11, the RER has a positive impact on the current account balance, working through both exports and imports. Therefore, the positive effects of the real exchange depreciation on exports and economic growth needs to be taken into account along with the capital loss on the stock of debt. However, the important message here is the need to avoid shifting the full burden of external adjustment on the real exchange rate, which is what Pakistan appears to have been doing over the past decade, and balance the exchange rate management with fiscal adjustment.

Fiscal Deficits and Internal Balance

23. Pakistan's relatively low rate of inflation despite high rates of fiscal deficits has led some to believe that prevailing fiscal deficits, although higher than desirable, are still manageable. Let us examine this argument in some greater detail. We first turn to the dynamics of fiscal deficit, total government debt and money creation, which can conveniently be summarized by the following expression (see Easterly and Fischer (1990)).

$$\Delta td = -z - u + (r-g)\,td \qquad (2)$$

where Δtd = change in total (domestic plus external) government debt as a share of GDP
r = real interest rate on total government debt
g = real growth rate of GDP
z = primary budget balance as a percentage of GDP
u = seignorage revenue as a share of GDP

24. The intuition behind this expression can be seen as follows. The change in total government debt as a percentage of GDP can be explained by three factors.[8] First, other things remaining unchanged, the non-interest fiscal deficit (primary deficit) will increase the debt to GDP ratio. Second, the non-interest fiscal deficit can be financed through money creation--this is the role of seignorage as a share of GDP. Third, to the extent that money creation falls short of the primary deficit, this gap will need to be financed through new debt which in turn will generate interest obligations. However, the denominator of the debt ratio is GDP, so the debt ratio will decline with real growth. So far as real growth of the economy is less than the real interest rate on public debt, the contribution of this third factor to the debt-GDP ratio will be negative.

25. The third component--*(r-g)td*--shows the dynamics of the debt through the interplay of real interest rate and real economic growth. Suppose the government were running primary deficits that exceed the amount of resources mobilized through the seignorage. Then, the government will need to borrow (domestically and/or externally). Now if the real interest rate on this borrowing exceeds the real growth of the economy, then the numerator of the debt to GDP ratio will grow faster than the denominator, causing the debt to GDP ratio to grow without limit. At some point, the government will find in impossible to borrow any further as confidence problems take over.

26. What would prevent the government from financing its entire non-interest deficit through money creation and avoid the instability of the debt dynamics component? The answer lies in the implications of money creation for inflation and the feedback of this high inflation for the

[8] Note that the impact of real exchange rate changes on external debt in ignored in this formula.

sustainability of growth. The relationship between seignorage (or inflation tax)[9] and the demand for real balances can be shown as follows (see Box 2).

Box 2
Money and Inflation in the Long Run

In steady state, the rate of inflation will equal the rate of growth of money less the real rate of growth of the economy.

$$\pi = m - g \qquad \text{(i)}$$

where $\pi = \Delta P/P$;the rate of inflation
$m = \Delta M/M$;the rate of growth of money
$g = \Delta y/y$;the rate of growth of output

The inflation tax is defined as the real value of the base money

$$T = \Delta M/P \qquad \text{(ii)}$$

this can be rearranged to yield

$$T = \Delta M/M \cdot M/P \qquad \text{(iii)}$$

$$= (\pi+g)M/P \qquad \text{(iv) substituting from (i) above}$$

See: Dornbusch and Fischer (1993).

$$T = \frac{(\pi+g)M}{P} \qquad (3)$$

where T = $\Delta M/p$ the inflation tax
π = domestic rate of inflation
g = real GDP growth rate
M = base or "high-powered" money
P = domestic price level
M/P = real base money

[9] A distinction is often drawn between seignorage and inflation tax. We use these concepts inter-changeably in this paper.

Expression (3) indicates that the amount of resources that could be mobilized though money creation depends on three factors -- the rate of inflation, the growth of the economy, and people's willingness to hold real money balances. If the demand for real balances were invariant with respect to inflation, the government could in principle mobilize large amounts of resources though money creation. The problem, however, is that empirical evidence shows that the demand for real money balances is a negative function of inflation and this sensitivity increases with the pace of inflation. So, other things remaining unchanged, more money creation would cause a more rapid pace of inflation which will reduce the demand for real money balances. Therefore, the impact of inflation on seignorage will depend upon the relative strengths of the two opposing forces--with high inflation the inflation tax rate (π) goes up, but the tax base (M/P) falls.[10]

27. Let us now apply these concepts to Pakistan's case. Table 13 shows the government's total debt, interest payments, primary deficit and seignorage, all expressed as a percentage of GDP. A number of important points should be noted. First, in calculating domestic debt, the Government's obligations to the State Bank of Pakistan (SBP) are excluded as these are simply the counterpart of a large component of the seignorage. Second, it is assumed that the Government does not pay interest on the SBP's holding of T-bills. Examination of the SBP profit and loss accounts suggest this is a reasonable assumption. Third, seignorage revenues are broken down by the actual beneficiaries. A significant share of the seignorage revenues are returned back to the private sector through SBP rediscounts to commercial bank at below market rates.[11] The profile of total debt shows the same pattern as external debt, declining upto 1981 and then a large increase to over 84% of GDP by 1991. Decomposing the change in total debt-GDP ratio into its determinants yields the following results (see Table 14).

- Pakistan ran large budget deficits between 1973 and 1981; other things remaining unchanged, the associated primary deficits would alone have added 77 percentage points to the total debt-GDP ratio over the period. The effect of these large deficits was, however, more than offset by a combination of revenues from seignorage, negative interest rates, rapid economic growth and an appreciation of the real exchange rate. So, despite large fiscal deficits, the total debt-GDP ratio actually declined.

During 1981-1991, the total debt-GDP ratio changed gear and grew rapidly, expanding by 38 percentage points over the period. What caused this worsening? First, of course, was the role of fiscal deficits--although primary deficits were lower on average than during the previous decade, they remained significantly large. In fact, other things remaining unchanged, primary deficits alone would have added 52 percentage points to the total debt-GDP ratio. A second factor that added to the debt-

---

[10] This relationship between inflation and seignorage takes the form of a bell-shaped curve. Seignorage initially rises with inflation, then reaches a maximum before declining. The classic work is due to Cagan (1956), also modified by Friedman (1971) to bring in the role of income growth in seignorage, and by Bailey (1962) to show the impact of welfare costs of inflation. Friedman's modification is especially important for low inflation countries, where higher economic growth by itself will yield non-inflationary means of budget financing through moderate money creation.

[11] The correct definition of seignorage revenues for the Treasury requires one further adjustment. Interest earned by SBP on the rediscounts less interest paid by SBP on commercial bank required reserves should be added back. Unavailability of the required data presented this adjustment.

GDP ratio was the depreciation of the real exchange rate. As noted earlier, although real exchange rate contributed to improving external creditworthiness by increasing exports, it nevertheless raised the debt-GDP ratio through its impact on capital loss on the stock of external debt. The less rapid increase in the total debt-GDP ratio was partly due to the revenues from seignorage, which tended to offset almost a third of the impact of the primary deficits. Moreover, the debt dynamics component continued to dampen the adverse effects of high deficits because of Pakistan's strong growth performance, even though interest rates turned positive in real terms.

Table 13: Pakistan: Trends in Debt, Interest Payments, Primary Balance and Seignorage as percentage of GDP

Year	TDGDP	GINTGDP	PBGDP	SENGDP	Treasury use of SENGDP
1972	72.5	1.8	- 4.1	3.6	2.6
1973	79.3	1.7	- 6.5	2.2	0.3
1974	67.4	1.7	- 7.0	-0.8	-2.3
1975	59.6	1.5	-11.4	2.0	0.7
1976	60.9	1.9	-11.0	2.3	1.6
1977	61.6	1.9	- 9.0	2.8	3.0
1978	59.5	1.9	- 8.1	2.2	2.1
1979	58.2	2.0	- 9.6	3.6	2.6
1980	55.2	2.2	- 8.2	2.4	0.7
1981	49.8	2.0	- 6.5	1.2	-0.6
1982	55.4	2.2	- 6.5	2.3	2.3
1983	59.7	2.9	- 8.2	1.9	0.9
1984	57.6	3.4	- 6.5	2.2	2.2
1985	63.9	3.5	- 5.2	1.2	0.4
1986	76.0	3.8	- 4.3	2.8	1.7
1987	84.4	4.2	- 4.0	3.0	1.3
1988	76.0	4.9	- 3.6	1.6	1.0
1989	80.4	5.0	- 2.7	2.5	1.8
1990	83.9	5.5	- 1.0	2.5	2.0
1991	84.3	5.0	- 3.8	4.1	3.3
1992	80.6	5.3	- 2.2	1.4	0.7

Source: Estimated from data available in Economic Survey, Ministry of Finance (various issues); International Financial Statistics (IFS) of IMF and the Monthly Bulletin of the State Bank of Pakistan (SBP). See also Annex Table A3.

Table 14: Pakistan: Factors Underlying the Changes in the Total Debt-GDP Ratio, 1973-1991
(%)

Year	Δtd	z	u	(r-g)td	$\frac{\Delta e}{e}d$
1973-1981	-29.5	-77.1	8.1	-94.6	-3.9
1981-1991	34.5	-52.3	16.3	-25.1	23.6

Source: Own estimates

Although the debt dynamics component remained favorable, it is important to note the substantial difference in the impact over the two periods. Indeed, the differential effects of the debt dynamics component on the total debt-GDP ratio over the past two decades is a key result that needs emphasis. The reason that Pakistan has avoided an explosive debt situation in the face of large fiscal deficits over the past twenty years is largely explained by the fact that real interest rates have been negative for a substantial period. However, the interest rate on both external and domestic debt has been turning positive. Continued high growth of the economy has helped absorb the adverse effect of this change. But unlike the 1970s, this cushion is weakening. Indeed, if real interest rates had been positive--say 3% in real terms over the past twenty years--the total debt-to-GDP ratio would have expanded by an additional 40.5 percentage points between 1973 and 1991, reaching 125% in 1991.

28. Can Pakistan run large fiscal deficits as in the past and avoid a debt crisis by financing these deficits through seignorage or inflation tax? In order to estimate the relationship between seignorage and inflation, we first need to estimate the demand for real money balances. The following specification was used to estimate the demand function:

$$Ln\ (\frac{BM}{P}) = Ln\ A + \alpha_o \ln y - \alpha_1 \pi + \alpha_2 \ln\ (\frac{BM}{P})_{-1}$$

where Ln = natural log
A = constant
BM = Base or high-powered money
P = price level
y = real income
π = inflation rate

The specification allows the elasticity of demand for real balances to vary along the demand curve. The estimated results are shown in Table 15. The coefficients are of the right sign. The long-term elasticity of real balances with respect to real income is close to one.

Table 15: Pakistan: Demand for Real Money Balances, 1973-1992

Variable	LnA	Lny	π	$Ln(\frac{BM}{P})-1$
Coefficient value	-0.376	0.256	-0.011	0.757
t-ratio	(-0.81)	(1.70)	(-3.34)	(6.06)
D.W. = 2.41, Adjusted R^2 = 0.98				

Using these results and expression (3), the relationship between seignorage and inflation is shown in Graph 8. The graph suggests that in Pakistan the demand for real balances is pretty sensitive to inflation. Seignorage grows noticeably with inflation reaching a maximum of about 3.2% of GDP at an inflation rate of 20%, and then falls as higher inflation cuts into the base of the inflation tax and reduces revenue despite the higher tax rate. During the past two decades, Pakistan mobilized some 2% of GDP p.a. on average as inflation tax, running an average inflation rate at below 10% p.a. While there is some scope to mobilize higher revenues from inflation tax, the price will need to be an acceleration of inflation in the 15-20% range with adverse consequences for other economic variables. But most importantly, even if the Government were to accelerate inflation to the 15-20% range, on average it would mobilize only an additional 1.2% of GDP from seignorage. So, with positive real interest rates, the end result of the large fiscal deficits will be a continuously rising debt to GDP ratio which cannot be sustained in the long run[12].

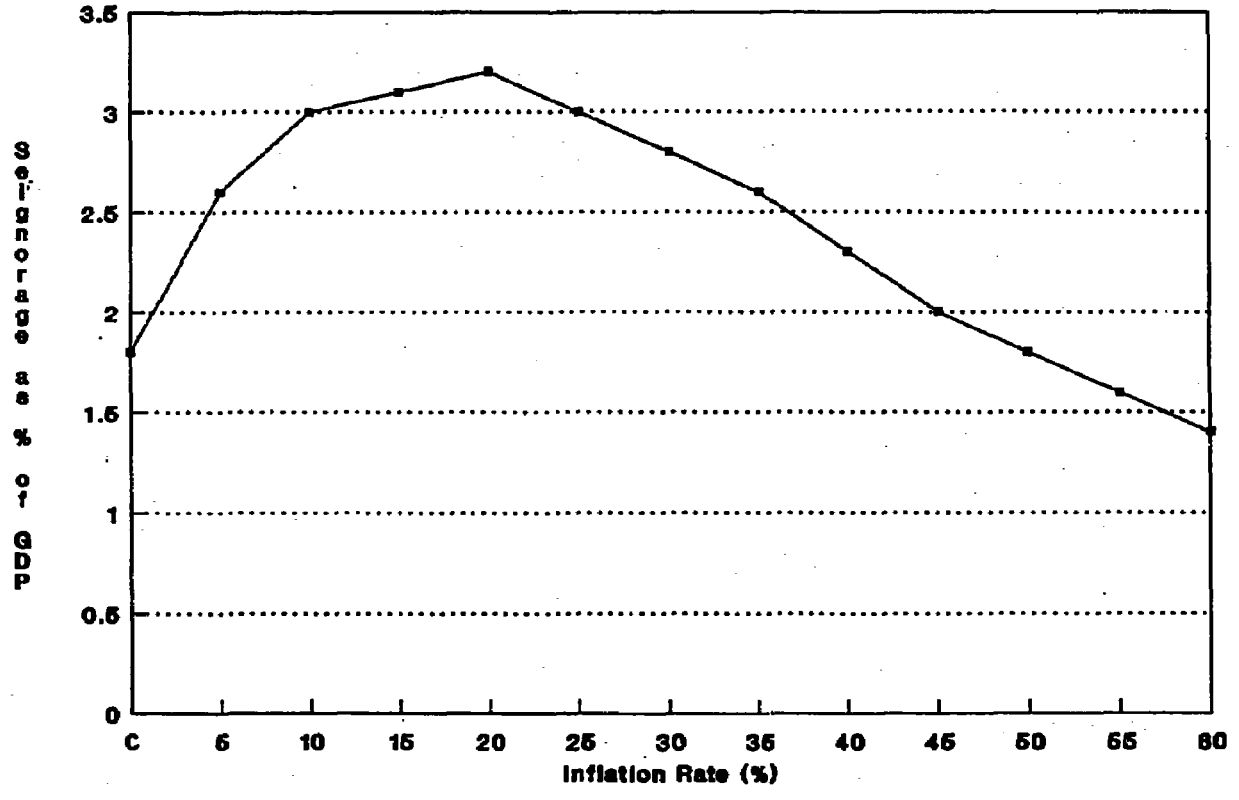
Sustainable Current Account and Fiscal Deficits--Implications for the 1990s

29. We now have all the elements of the analytical framework to pull together the various threads and draw the implications for sustainable current account and fiscal deficits for Pakistan in the 1990s. Let us first examine what constitutes sustainable current account deficits.

30. Sustainable current account deficits: Estimating sustainable current account deficits involves determining Pakistan's room for additional external borrowing. This is turn involves two considerations: solvency and creditworthiness. It can be shown that solvency requires that

[12] Note also that the relationship between seignorage and inflation is not a static one. Pakistan seems to be an outlier in terms of its ability to generate higher than average revenue from seignorage than other countries at comparable inflation rates. For example, Easterly and Schmidt-Hebbel (1993) show that over nearly 20 years across 51 countries, three quarters of annual observations of inflation tax revenues were less than 2% of GDP. One important reason for the higher seignorage revenue yield in Pakistan is the high rate of economic growth. Another reason is the large ratio of base money, particularly currency, to GDP resulting from the low financial depth of the Pakistani economy. So, with greater financial deepening, the ability to raise seignorage revenue is likely to fall even with similar GDP growth rate and inflation.

Graph 8
Pakistan -- Seignorage as a Function Inflation



$$V \geq (r-n)\, b \text{ ---} \qquad (4)$$

which states that the non-interest current surplus must at least equal the initial debt times the difference between real interest cost of foreign debt and real output growth rate.[13] So long as the real interest rate is lower than the real growth of the economy, Pakistan can continue to run current account deficits without becoming insolvent. The need to maintain solvency of its external payments obligation alone sets some strict limits on Pakistan's future current account deficits. Thus, given Pakistan's growth target of 6% p.a. and given the outlook for international real interest rate of 2-3% per annum in the next 5 years, Pakistan can run non-interest current deficits of about 1.5-2% of GDP which implies a current account deficit of about 3-3.5% of GDP p.a. The higher the real interest rate, the lower the non-interest deficit that will maintain solvency. Indeed, if real interest rates

[13] See Sweder van Wijnbergen (1989).

exceed the growth rate of the economy, the non-interest current balance would need to go into surplus to maintain solvency.

31. Solvency consideration alone is often not enough to enable a country's continued access to external finance. The lenders perception of a country's "creditworthiness" is what counts. Lenders look at various indicators, particularly the economy's capacity to service the debt. In practice, various measures of this capacity are used--including the debt-service ratio, the debt/exports ratio and the debt/GDP ratio. Commercial lenders pay particular attention to the debt-service and the debt to export ratios, as they represent direct measures of the economy's ability to service debt in the short run. Over the longer term, appropriate policy changes can allow a diversion of resources from most tradeables to tradeables. So, the debt to GDP ratio is a better measure of a country's capacity to service its debt over the longer-term. As suggested by Daniel Cohen (1985, 1988), an appropriate measure of a country's creditworthiness is the 'debt-resource' ratio, which is calculated as a weighted average of debt to GDP and debt to exports ratios. Another useful result from Cohen's work is that if a country has not defaulted, then maintaining a constant debt to resource ratio constitutes a better debt strategy than forcing the country to reduce this ratio.[14] Using these results, Pakistan's sustainable current account deficits are indicated in Table 16. The table suggests that higher the GDP growth rate and/or the higher the export growth rate, the higher the level of sustainable current account deficits. Thus, given Pakistan's medium-term target of achieving 6 percent growth in GDP and the projected real export growth of 6-7% p.a. (the same level as over the past 20 years), the maximum levels of current account deficit that are sustainable (maintains a constant debt to resource ratio) is around 3 percent per annum. If export growth can be accelerated further to say, 8% p.a. and the GDP growth is boosted to 7% p.a. the level of sustainable current account deficit can be raised by another half percentage point.

Table 16. Pakistan: Prudent Levels of Foreign Borrowing--Sustainable Current Account Deficits
(% of GDP)

GDP Growth Rate	Growth Rate of Exports						
	2	3	4	5	6	7	8
2	1.0	1.3	1.5	1.8	2.0	2.3	2.6
3	1.2	1.5	1.7	2.0	2.2	2.5	2.8
4	1.4	1.7	1.9	2.2	2.4	2.7	3.0
5	1.6	1.9	2.1	2.4	2.6	2.9	3.2
6	1.8	2.1	2.3	2.6	2.8	3.1	3.4
7	2.0	2.3	2.5	2.8	3.0	3.3	3.6

Source: Own estimates

[14] A country that has been current in servicing its debt should not be required to reduce the debt-resource ratio because the transition cost could result in lower creditworthiness. If, however, this reduction takes place as a result of a surge in exports, a strong GDP growth and strong domestic resource mobilization, that would be fine. The issue here is to avoid an extra degree of constraint.

32. Sustainable fiscal deficits. Sustainable current account deficits impose significant restrictions on sustainable fiscal deficits. The intuition underlying this can best be seen from the fundamental budgetary constraint that fiscal deficits need to be financed through external borrowing, domestic borrowing or money creation. The level of external borrowing is determined by sustainable current account deficit (as above); the level of domestic borrowing is determined by the need to avoid a domestic debt explosion and crowding out of the private sector; while the level of money creation depends upon the level of inflation. So, for any given growth, external balance and inflation targets, there is a particular level of fiscal deficit that is consistent with these targets. Thus, given Pakistan's growth target of 6 percent p.a. and the sustainable level of current deficit that is consistent with this target (defined in Table 16)[15], the sustainable levels of fiscal deficits is illustrated in Table 17 as a function of the rate of inflation.[16] For domestic borrowing, we assume zero additional domestic borrowing. The rationale for this assumption is quite simple. With greater financial liberalization currently underway in Pakistan, the real interest rate on government domestic borrowings has been turning significantly positive, reaching about 3% in 1993. As financial sector distortions are further reduced, GOP is likely to face the full market cost of domestic borrowing which is expected to be around 5-6% in real terms. In this situation, it will be imprudent for Pakistan to continue to increase its domestic debt because, as explained in para 25, the debt dynamics interplay--*(r-g)dt*--could lead towards financial insolvency[17].

33. The results of Table 17 are quite revealing. First, Given Pakistan's growth target of 6% p.a., an inflation target of 5% (by 1996),[18] and assuming an export growth rate of 7% p.a., consistency of the external target (creditworthiness) requires that fiscal deficits are reduced to around 4.5-5% of GDP p.a. This is much below the 8% average of the past decade and the 9.7% reached in 1992/93. Second, adding another half percentage point to the fiscal deficit will require, in the absence of higher borrowing, an acceleration in the inflation rate to 15-20% p.a. This suggests that the inflationary consequences of higher fiscal deficits are substantial. Third, financing even further increases in fiscal deficits will require higher external or domestic borrowing because running higher inflation will be counter- productive for revenues. Given the trend towards increasing real interest rates, these higher borrowing will result in a serious debt problem; this in turn will jeopardize Pakistan's ability to maintain growth rates at 6% p.a.

---

[15] We assume a growth rate of 6% p.a. and export growth of 7% p.a., which yields a sustainable current account deficit of 3.1% of GDP. Roughly 70% of this is available for the public sector.

[16] Note that this is a somewhat simplistic presentation as it ignores the general equilibrium effects of inflation on growth and current account deficits. Also, the real exchange rate is assumed to remain constant.

[17] It is possible to argue that Pakistan is moving towards a more open economy, including greater international capital mobility. This means Pakistan could end up aligning its financial policies with the international market so that domestic and international interest rates are fully aligned. Even in this extreme case of perfect capital mobility, real interest rates in Pakistan are likely to be higher than in the international markets due to country creditworthiness risk considerations. Depending upon the risk premium, a divergence of one to two percentage points between international and Pakistan interest rates would still lead domestic real interest rates in the 4-5% range. With real interest rates very close to real GDP growth rate, and given the already large interest cost of domestic debt, it would be prudent to avoid any further increase in domestice debt.

[18] As described in the 1993/94-1995/96 PFP.

34. It is important to note that fiscal deficits in the 4.5-5% of GDP range are sustainable in the sense that such deficits are consistent with other macroeconomic targets/variables (GDP growth rate, export growth rate, inflation rate, real interest rate). If these targets/variables change, the level of sustainable fiscal deficit will also change. In particular, external shocks could reduce economic growth, weaken export performance and raise real interest rate. For example, if a sustained external shock were to reduce medium-term export growth to 4% p.a., and GDP were to falter to 3-4% p.a., sustainable fiscal deficit will fall below 4% of GDP. Similarly, as noted in footnote 12, GOP's ability to mobilize 2.6% of GDP in terms of seignorage revenue at 5% inflation rate could be reduced with the greater monetization of the economy and improvements in financial services. This is very likely, as suggested by the experience of more financially developed economies where the ratio of base money to GDP is much lower. To guard against these risks and uncertainties, a prudent policy stance would be to aim for an even lower fiscal deficit than 4.5-5% of GDP.

35. Seignorage and Quasi-Fiscal Deficits: The arguments underlying the result of Table 17 is based on the key assumption that the full amount of seignorage revenues are available for financing the fiscal deficit. However, as noted, this has not been the case in the past. A part of the seignorage revenue has been used to finance "quasi fiscal deficits" resulting from transactions between the State Bank of Pakistan and the private sector. There are three sources of quasi fiscal deficits: (1) subsidized credit schemes funded by the SBP; (ii) exchange rate losses resulting from SBP forward cover operations; and (iii) write-off on loans that are not recovered. The cost of these transactions are estimated at around 1.3% of GDP in 1990/91. The diversion of seignorage revenues to finance quasi fiscal deficits has required additional domestic borrowing to finance the ordinary fiscal deficits. Apart from the resource misallocation implications of the quasi-fiscal deficits, their macroeconomic implications in terms of additional domestic borrowing needed to finance the ordinary fiscal deficits suggests an urgent need to review and rapidly phase out these quasi-fiscal transactions. Without this policy change, financing of fiscal deficits even in the 4.5-5% range would require positive net domestic borrowing with adverse financial consequences.

Table 17. Pakistan: Sustainable Fiscal Deficits as a Function of Inflation Rate
(% of GDP)

Inflation Rate	Seignorage	Net External Borrowing	Net Domestic Borrowing	Sustainable Fiscal Deficits
5	2.6	2.2	0	4.8
10	3.0	2.2	0	5.2
15	3.1	2.2	0	5.3
20	3.2	2.2	0	5.4
25	3.0	2.2	0	5.2
30	2.8	2.2	0	5.0

Source: Own estimates

Financing High Growth: The Saving-Investment Challenge.

36. The previous section focused on the consistency of fiscal policy given growth, inflation and sustainable current deficit targets. The relationship between fiscal deficit and growth was not examined directly. How does fiscal policy affect growth? One key link is through the implications of fiscal policy for saving and investment. Maintaining high growth will require an adequate investment effort. Empirical evidence from Pakistan suggests that the rate of capital accumulation is a major determinant of economic growth. What constitutes an adequate investment effort? Over the past 20 years, Pakistan's average fixed investment rate has been around 17% of GDP, which, given the rate of growth of the economy, yielded a net capital output ratio of 2.75 and a gross capital-output ratio of 3.14. So, assuming unchanged efficiency, a 6% growth target will require a gross fixed investment effort of about 19% of GDP p.a., which is higher than the past average rate. However, this ignores an important factor: the need to build up the economic and social infrastructure which appears to have been neglected in the past. Evidence from fast-growing economies show that their investment efforts have been in the range of 24-30% of GDP p.a. Therefore, it is reasonable to expect that Pakistan would need to accelerate its investment effort to the 21-22% of GDP range in order to sustain the growth rate of 6% p.a. This corresponds to a gross ICOR of about 3.5.

37. The financing of this investment effort, however, will present a major challenge. Table 18 shows the trend in investment finance broken down by its components--foreign and national saving. The pattern shows a fairly strong dependence on foreign saving--about a quarter of the investment effort is financed through foreign saving. We saw in the previous section that the level of sustainable current account deficits (foreign saving) is around 3% of GDP--much lower than the 5% of the past. At the same time, it was noted above that the fixed investment rate will need to be raised from 17% of GDP to around 21-22%. Adding the two yields a total required increase in national saving effort of 6-7% of GDP. This is an indication of the magnitude of internal adjustment necessary to ensure the consistency of growth with macroeconomic stability.

Table 18. Pakistan - Saving-Investment Balance, 1972-92
(% of GDP)

	Average 1972-80	Average 1980-85	1986	1987	1988	1989	1990	1991	1992
Investment									
- Gross Fixed Investment	16.7	16.8	17.0	17.5	16.5	17.3	17.3	17.1	17.2
- Change in stocks	-0.3	1.8	1.8	1.6	1.5	1.6	1.6	1.6	1.4
- Gross Investment	16.4	18.6	18.8	19.1	18.0	18.9	18.9	18.7	18.6
Financed by:									
- Foreign Saving	5.5	4.0	3.9	2.2	4.4	4.8	4.2	4.8	3.0
- National Saving	10.9	14.6	14.9	16.6	13.6	14.1	14.2	13.9	13.4

Source: World Tables 1993 and Ministry of Finance

38. Expanding the saving effort by this large magnitude is not an easy task; it is not an impossible challenge either. As shown in Table 6 earlier, there are many countries where the national saving effort is in the range of 20% of GDP or above (e.g. India, Indonesia, Thailand, Malaysia). Efforts will be needed to raise both the private and the public saving rate. In Pakistan, special emphasis needs to be placed on public saving, which brings us to fiscal policy once again.

39. Avoiding a Crunch on the Private Sector: The 'crowding out' effect of fiscal policy can be best understood by looking at another accounting identity: fiscal deficit is simply equal to the sum of foreign saving (current account deficit) and net private saving (difference between private saving and investment). So, given sustainable current account deficits (foreign saving), higher fiscal deficits must be financed through a private net surplus. Table 19 illustrates the 'crowding out' impact of Pakistan's large fiscal deficits on the private sector.

40. Running negative public saving implies that a part of the investible surplus is being used to finance public consumption. Private sector saving has been mobilized for the public sector partly through the inflation tax but mostly through domestic borrowing. To contain the fiscal cost of domestic borrowing, Pakistan has followed a policy of financial repression for a fairly long period. (see Graph 9 for movements in interest rates). While financial repression allowed the Government to mobilize resources for the budget deficit at below cost, the opportunity cost of this policy was reduced financial resource mobilization and repressed private credit and investment. For example, bank deposits and private credit as a share of GDP has been much lower in Pakistan than in countries with more liberalized financial policies. Both financial variables show signs of relative decline or stagnation, unlike other high performing economies which exhibit considerable financial dynamism (see Table 20, see also Box 3).

41. Financial liberalization inevitably results in a rising interest cost of fiscal deficits. Indeed, evidence that this has been happening in Pakistan was presented earlier. It was also pointed out that the dynamics of borrowing (expression 2) could eventually lead to a major financial crisis for the public sector. Rising real interest rate is also of concern to the private sector, as this tends to have an adverse effect on incentive for investment. The challenge for policy is to develop an appropriate combination of macroeconomic policies that prevents financial repression but also avoids high real interest rates. Fiscal policy has a very important role here. As Pakistan proceeds with further financial liberalization to facilitate stronger financial intermediation and improved financial resource allocation, this should be combined with fiscal adjustment to prevent a crowding out of the private sector through high interest rates, while also preventing a public sector financing crisis.

Table 19: Pakistan--Private Sector Financing of Public Investment a/
(% of GDP)

	Average 1972-80	Average 1980-85	1986	1987	1988	1989	1990	1991	1992
Public Investment	11.2	9.3	9.3	9.7	8.8	9.0	8.3	8.2	7.7
Financed By:									
- Foreign Savings b/	5.0	3.6	1.7	1.9	3.3	4.0	3.1	3.2	2.1
- Public Saving	1.3	0.6	-0.4	-1.8	-1.6	-1.4	0.1	-2.2	-0.3
- Private Net Surplus	4.9	5.1	8.0	9.6	7.1	6.4	5.1	7.2	5.9
Private Investment	5.2	9.3	9.5	9.4	9.2	9.9	10.6	10.5	10.9
Private National Saving	9.6	14.0	15.3	18.7	15.2	15.5	14.1	16.1	13.7
Private Foreign Saving	0.5	0.4	2.2	0.3	1.1	0.8	1.1	1.6	0.9

a/ Stock changes are assumed to be financed by the private sector.
b/ Defined as public sector's share of current account deficit.

Source: Ministry of Finance

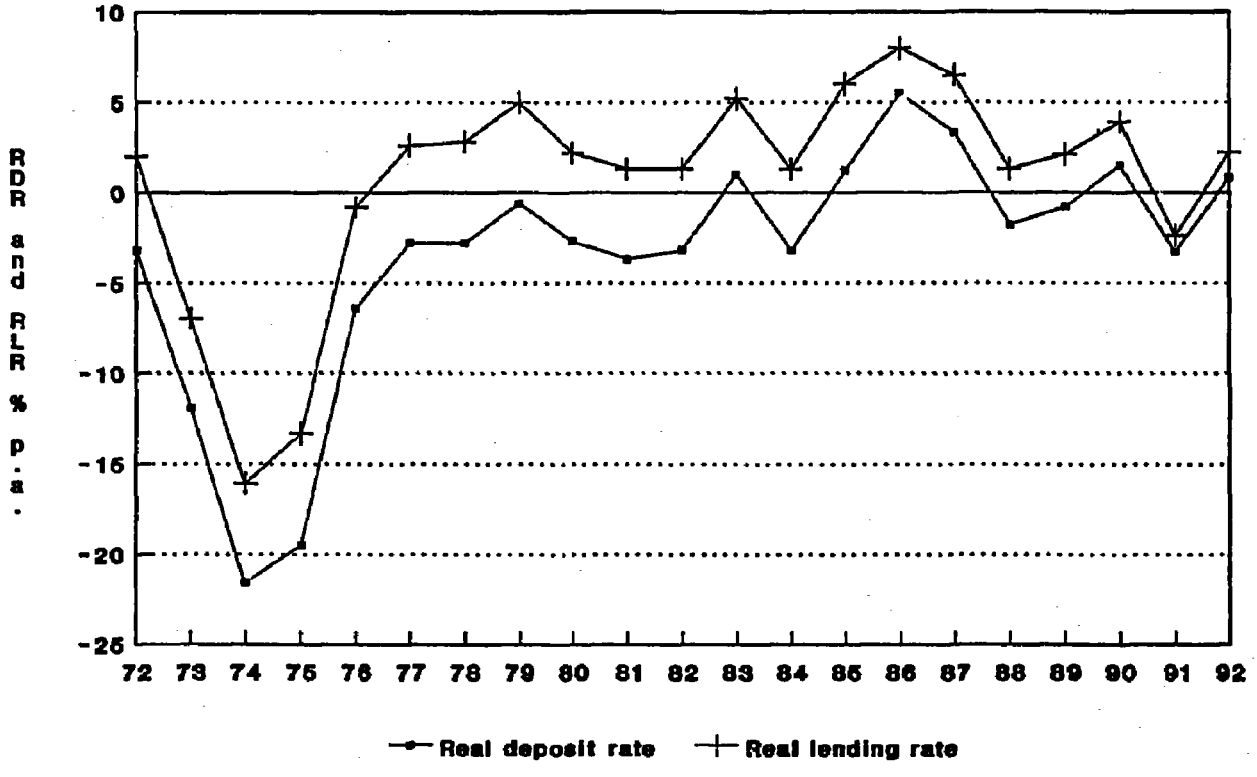
Table 20: Financial Development in Pakistan Relative to Selected Countries a/
(%)

	1972		1980		1985		1990		1992	
	D GDP	PC GDP	D GDP	PC GDP	D GDP	PC GDP	D GDP	PC GDP	D GDP	PC GDP
Pakistan	31.9	27.9	27.5	24.0	28.1	31.0	24.1	27.5	28.8	26.7
Indonesia	-	-	12.0	9.5	18.1	18.2	38.2	50.2	47.6	55.0
Malaysia	39.7	21.1	40.2	38.3	53.9	61.7	57.1	72.2	-	-
Thailand	25.9	19.5	31.2	30.6	54.3	49.5	78.2	79.3	-	-
Chile	19.6	9.7	21.4	43.4	27.0	70.1	33.5	50.2	36.8	51.2

a/ D = Total bank deposits; PC = private credit; GDP = gross domestic product.
Source: International Financial Statistics

42. Not all public spending is at the expense of private spending. Public investment can and should play an important role in supporting private investment and economic growth. There is adequate empirical evidence which suggests that public spending in physical infrastructure and human capital play an important role in raising the productivity of private investment and increasing economic growth. Baffes and Shah (1993), for example, using cross-country data, found a strong positive response of GDP growth to human capital and infrastructure investment for a large number of countries including Pakistan. As noted in para 34, there is a concern that Pakistan will need to

Graph 9
Pakistan -- Movements in Real Interest Rates



invest quite heavily in basic economic and social infrastructure to increase labor productivity and reduce the cost of production. So, another major challenge for fiscal policy is to ensure that the composition of the public investment program is consistent with Pakistan's development objectives and priorities. We now return to the role of public spending on human resource development in some greater detail in the next section.

Human Capital Formation and Implications for Pakistan's Growth Performance

43. One of the key findings of the East Asian Miracle study is that the high performing East Asian economies invested very heavily in human capital formation. Quantitative analysis suggest that human capital was a key factor explaining the better growth performance of these economies. There is similar evidence of a very strong role of human capital in explaining growth performance across

Box 3
Costs of Financial Repression

The costs of financial repression can be substantial. Mexico's experience illustrates the effects of financial repression under rising inflation. Financial controls intensified after 1981 as inflation soared, and the ratio of private credit to GDP dropped below already low levels. Following financial liberalization in 1990, the ratio doubled in two years. In Ghana, private credit was at a very low level in the late 1980s, reflecting years of financial repression. Countries that abstained from repressive interest rate controls, such as Chile and Thailand, and Indonesia (after 1983) had very high levels of private credit which may partially explain their superior investment and growth performance in the 1980s.

Source: William Easterly and Klaus Schmidt-Hebbel (1993)

countries from a number of other studies (see for example Barro (1991); Barro and Lee (1993)). What are the implications of this result for Pakistan that has grown fairly rapidly but without commensurate progress in improving its human capital[19]?

44. One obvious implication of the relative neglect of human development has been the high rate of population growth in Pakistan. So, even with a growth rate over the past ten years that has been the highest in the South Asia Region, Pakistan's per capita GDP growth has been below the region's average. Therefore, over the medium-to-long term, a major pay-off to substantial investment in human capital, especially female education, would be a sharp reduction in the population growth rate.

45. The fact that Pakistan has sustained an average growth of 6.0% p.a. over the past twenty years even with the neglect of human capital formation has emerged as a development puzzle. One needs to look a bit more deeply at the sectoral sources of growth to understand this phenomenon. While there is some positive evidence of structural change happening in Pakistan over the past 20 years, especially in terms of the share of manufacturing exports in total exports, the picture does not suggest the making of a dynamic economy. The share of manufacturing in GDP remains relatively small. Moreover, there is a strong dependence of the manufacturing sector on a small number of agriculture-related industries (cotton, foodstuff). Given the relatively thin manufacturing base, it is not surprising that skills have not yet emerged on a major constraint on the rate of economic growth. Moreover, firm level analysis suggests that on-the-job training has been playing an important role in skill formation, making up for some of the deficiencies resulting from weak formal education. In agriculture, where growth was also fairly robust (4.2% p.a.), a large part of the output expansion

[19] See Behrman and Schneider (1991) for a comparative analysis of investment in human capital in Pakistan and other developing countries.

came from area expansion supported by heavily subsidized water and fertilizer. Except for cotton and wheat, productivity improvements have not been very significant. In the services sector, activities that have dominated include construction, trade and informal sector services. Given the limited nature of the skills required, learning-by-doing seems to have been the main basis for acquiring the skills needed to perform these functions.

46. The real question boils down to whether the past economic activities will continue to provide the basis for growth in the future? The hypothesis of this paper is that this will be very difficult. Take agriculture, which as noted has grown at the healthy pace of over 4% p.a. over the past two decades. Continued strong agricultural growth rate would be critical to sustaining high overall GDP growth. As noted, although there have been some improvements in productivity, expansion of area under cultivation supported by heavily subsidized water and fertilizer has played a critical role in supporting past agricultural growth.[20] Evidence suggests that there is a substantial productivity gap, even with available technology, between potential yields per hectare and what is actually achieved for most major crops including wheat. For the future, much more reliance will need to be put on productivity improvements than in the past to support a healthy agricultural growth rate as land and water have become increasingly scarce. Also, with rising cost of farm production resulting from cutbacks in subsidies on fertilizer, increases in water O&M charges and reduction of interest subsidies for mechanized inputs, improvements in farm productivity will be essential to maintain incentives. A further change that will be necessary is to diversify farm production away from heavy reliance on three major crops--rice, cotton and wheat--to higher-value production such as fruits and vegetables. Apart from rising cost of farm inputs, domestic demand for food crops (rice, wheat) is likely to expand less rapidly with the slowdown in population growth rate and given the relatively low income elasticity of these products. On the other hand, the higher income elasticity of other farm products (fruits, vegetables, meat) is likely to raise their prices. Improvements in farm productivity and diversification towards higher value crops will require considerable improvements in farmer education and research and extension services.

47. In manufacturing, growth has proceeded at an average pace of about 7.4% p.a. The sector remains heavily dominated by two main activities: textiles and food and beverages. Again, demand constraints for textiles at the international level will limit ability to expand at the same pace as in the past. A more diversified manufacturing base geared to the world markets will be needed to sustain continued rapid growth of the manufacturing sector. A more matured and diversified industrial base will be much more skill intensive than at present. This is fully borne out by the experience of the fast growing economies of East Asia. Secondly, the correction of policy distortions currently underway and/or necessary for the future--especially trade policy reform--will reduce the rents derived from trade and other protection. Greater competitive pressure at both home and abroad will require substantial improvements in labor productivity in the manufacturing sector. Again, a better educated and trained labor force will be necessary to raise labor productivity.

---

[20] For example, total cropped area expanded from 16.6 million hectares in 1972 to 21.35 million hectares in 1992; water availability increased from 71 MAF in 1972 to 124 MAF in 1992; fertilizer off-take grew from 379 thousand N/T in 1972 to 2068 thousand N/T in 1992.

48. Even in the services sector, skill requirements are changing. The reduction of the government's economic role in infrastructure and services and the growing role of the private sector is associated with greater competition in the provision of quality services at competitive prices. Again, productivity improvements will need to play a key role in supporting growth rates of 6-7% p.a., calling for a more skilled labor force.

49. It is hard to predict with any degree of certainty how quickly the structural transformation in growth will need to take place and therefore when the skills constraint will begin to bite in. Experience of other countries unequivocally suggest that this is a reality that will need to be faced sooner or later. Therefore, it is in Pakistan's interest to accelerate efforts to improve human capital formation. Fortunately, there is some evidence that this is now well recognized, as indicated by the formulation of the Social Action Program. The implementation tasks ahead, however, remain formidable.

V. SUMMARY AND CONCLUSIONS

50. Pakistan's rapid growth rate over the past two decades has attracted considerable attention and debate, with some regarding this growth performance as a "development puzzle" in view of a number of disconcerting factors that has prevailed along with rapid growth. These include: high fiscal and current account deficits, a low saving and investment effort, and a neglect of human capital formation. This paper sought to address two questions: What factors explain Pakistan's rapid growth? Can Pakistan sustain high economic growth over the next 10-20 years without first addressing the three disconcerting factors mentioned above?

51. What are the determinants of the past growth performance? Using a standard statistical framework, the paper concludes that:

- Physical capital accumulation played a very important role in Pakistan's growth performance--overall and in the manufacturing sector. Although Pakistan's investment rate remains low by international standards, the fixed investment rate grew steadily during the 1970s and then stabilized at around 17% of GDP in the mid-1980s. This allowed the capital stock, economy-wide and in the manufacturing sector, to expand fairly rapidly which in turn supported a substantial increase in the capital labor ratios and labor productivity.

- Accumulation of labor also played a significant role in overall economic growth, although the statistical significance of labor in explaining growth in the manufacturing sector came out as rather low. The relatively weaker statistical significance of the labor coefficient, especially in the manufacturing growth equation, reflects the growing captial intensity of production. But it is also an indication that, coloris paribus, population growth is too fast. Labor markets cannot absorb such a rapid growth in population, particularly with Pakistan's very low skills level. The increase in capital intensity could be the effect of two forces at work. First, Pakistan's macroeconomic policies have generally favored greater capital intensity of production, resulting from under-priced capital imports due to over-valued exchange rate (well upto the mid-1980s), low interest

rates and other incentives. Second, external migration of skilled and semi-skilled labor in the 1970s and early 1980s that tended to raise real wages.

- Greater trade liberalization, as measured by the increase in the ratio of total value of exports and imports to GDP, had a strong positive impact on Pakistan's growth performance. Once again, however, the statistical significance of trade policy surprisingly was reduced in the case of manufacturing sector. Nevertheless, the strong positive role of greater trade openness suggests that Pakistan needs to continue with further trade reforms to enhance competition and economic efficiency.

- The structural change dummy variable included to capture the impact of the change in the policy regime in Pakistan from the interventionist policy regime of the 1972-77 period to the market-oriented economy since 1978 came up with a significant coefficient in the case of both aggregate and manufacturing sector growth equations. This result is explained by the major improvement in efficiency resulting from the reduction in controls and bureaucratic interventions. Estimates of total factor productivity (TFP) confirm this finding as well--TFP change was negative in the first period as compared with the positive contribution of TFP change to growth in the later period. Once again, this reinforces the importance of further progress with economic liberalization.

52. Can past growth rates be sustained in the medium-to longer term? The paper examined each of the three disconcerting factors in some depth. A key conclusion is that past growth rates will be difficult to sustain without substantial progress in addressing these concerns. The analysis of consistency of macroeconomic policies of the past--especially fiscal policy was examined on the basis of a quantitative framework developed by Sweder van Wijnbergen (1988) and others. The key conclusions of this analysis are as follows:

- The main reason that Pakistan was able to sustain high growth and avoid a financial crisis in the face of large fiscal deficits was that the real interest rates on both external and domestic debt were substantially negative during the 1970s. Mainly because of this factor, debt to GDP ratios continued to decline even though Pakistan ran substantial fiscal and current account deficits in the 1970s.

- However, real interest rates have been turning positive during the 1980s. This development has already impacted, as expected, quite adversely on Pakistan's debt situation. As a result, notwithstanding some reduction in fiscal and current account deficits, the interest burden of the domestic and external debt has been increasing significantly in the 1980s.

- The outlook is that both foreign and domestic real interest rates will become significantly positive in the 1990s. In this situation, if Pakistan were to run fiscal and current account deficits of the same magnitude as in the past, a financial crisis is likely to emerge pretty rapidly.

- It is not possible to avoid a debt crisis by funding larger fiscal deficits through money creation. The analysis shows that Pakistan's inflation target of 5% p.a. is consistent

with 'inflation tax' of about 2-2.5% of GDP. This tax will reach a maximum of 3-3.2% of GDP with an inflation rate of 20%. A further acceleration of inflation will cut the 'inflation tax base' (real money balances) pretty rapidly so that the revenue proceeds from inflation will actually fall. Even trying to generate the maximum revenue of 3-3.2% of GDP from higher inflation tax (20%) is unwise. The adverse effects of this higher inflation on resource allocation and income distribution can be quite severe.

- Estimates of sustainable current account deficit (e.g. deficits that do not worsen external creditworthiness) suggest a value of about 3% of GDP p.a. Consistent with this and the inflation target of 5%, sustainable fiscal deficits are in the range of 4.5-5% of GDP per annum. It is important to note that these fiscal deficits are sustainable in the sense that they are consistent with other macroeconomic targets/variables (GDP growth, export growth, real interest rate and inflation). If these targets/variables change, the level of sustainable fiscal deficit will also change. In particular, external shocks could reduce growth, weaken export performance and raise real interest rates. To guard against these risks, a prudent policy stance would be to aim for an even lower fiscal deficit than 4.5-5.0% of GDP.

- Fiscal prudence calls for avoiding any net addition to domestic debt, given its high and growing financial cost. It is therefore important to ensure that revenues from seignorage (that are consistent with the 5% inflation target) are fully available for financing the ordinary fiscal deficits. This will require a rapid phase out of "quasi-fiscal deficits" resulting from the transactions between the State Bank of Pakistan and the private sector.

- The paper also suggests the need for a balanced use of fiscal, monetary and exchange rate policies. Putting the burden of external adjustment fully on the real exchange rate, as Pakistan seems to have done in the past, is inconsistent with improvements in external and internal balance not only because fiscal deficits will continue to put pressure on the external and internal debt but also because a real exchange depreciation will impose capital loss on the stock of external debt. A balanced policy stance involves setting the real exchange rate at its appropriate level and using monetary and fiscal policies to manage aggregate demand and stabilize the real exchange rate.

53. Regarding the implications of the low saving-investment effort, the paper concludes that a substantial adjustment will be needed to raise national saving and investment in order to ensure the consistency of the growth target with the need to reduce macroeconomic imbalances, while financing the accumulation of physical and human capital required to support high growth. The need particularly is to raise the national saving rate from the current low level of 14% of GDP to around 20-22% of GDP. This, in turn, will require a substantial fiscal adjustment which will raise public revenues and reduce public consumption to achieve a public saving rate of 3-4% of GDP, as compared with negative savings presently. A similar adjustment in public capital spending will be needed to ensure that public investment is focused on areas that promote private sector investment and growth--e.g. physical and human infrastructure.

54. Lower fiscal deficits will also help reconcile the need for greater financial resource mobilization with the objective of stimulating private investment. A large part of the domestic financing of the fiscal deficit has come from borrowing from the private sector. To contain the fiscal cost of domestic borrowing, Pakistan has followed a policy of financial repression for a fairly long period. While financial repression allowed the Government to mobilize resources for the budget at below cost, the opportunity cost of this policy was reduced financial resource mobilization and repressed private credit and investment. For example, bank deposits and private credit as a share of GDP have been much lower in Pakistan than in countries with more liberalized financial policies. Both indicators show signs of stagnation or even decline from relatively low levels, unlike other high performing economies which exhibit considerable financial dynamism. Financial liberalization, however, inevitably results in an increase in real interest rates which tends to have an adverse effect on incentive for private investment. The challenge for policy, therefore, is to develop an appropriate combination of macroeconomic policies that prevents financial repression but also avoids high real interest rates. Fiscal policy has a very important role here. As Pakistan proceeds with financial liberalization to facilitate stronger financial intermediation and improved resource allocation, this should be combined with fiscal adjustment to prevent a crowding out of the private sector through high real interest rates.

55. Finally, the paper argues that Pakistan's ability to sustain high growth rates in the medium-to-long term will also depend upon rapid progress with human capital formation. In the first place, the ability to reduce population growth rate will depend critically upon human resource development, especially education of women. Moreover, the sources of growth in the future will change substantially, as compared with the past. A diversified manufacturing sector will need to lead the way, supported by improved agricultural productivity and more efficient services. These in turn will require a much higher skill intensity of production than in the past. The international evidence on the importance of human capital formation for sustained growth performance is indisputable. Pakistan's recent shift in emphasis on this subject, as reflected in the Social Action Program, is evidence that this reality has dawned upon the policy-makers. Speedy implementation of this program however, remains a challenge.

References

Baffes, John and Anwar Shah (1993), "Productivity of Public Spending, Sectoral Allocation Choices, and Economic Growth." Policy Research Working Papers, WPS1178, World Bank, Washington, D.C.

Bailey, Martin J. (1962), "The Welfare Cost of Inflationary Finance." Journal of Political Economy, vol. 64, no.2.

Barro, R.J. (1989), "A Cross-Country Study of Growth, Saving and Government." NBER Working Paper No. 2855, Cambridge, MA.

Barro, R.J. (1991), "Economic Growth in a Cross Section of Countries." Quarterly Journal of Economics, vol. 106, May 1991.

Barro, R.J. and Jong-Wha Lee (1993), "Losers and Winners in Economic Growth." Paper presented to the World Bank Annual Conference on Development Economics, Washington, D.C.

Behrman, Jere R. and Ryan Schneider (1991), "How Does Pakistani Schooling Investment Compare with Those of Other Developing Countries?" Williams College, Williamstown, Mass.

Buiter, Wilhem and Urjit R. Patel (1992), "Debt, Deficits, and Inflation: An Application to the Public Finances of India." Journal of Public Economics, vol. 5, no. 2.

Burney, N.A. (1986), "Sources of Pakistan's Economic Growth." Pakistan Devleopment Review, vol. XXV, no. 4.

Cagan, Philip (1956), "The Monetary Dynamics of Hyperinflation." In Milton Friedman, edited, Studies in the Quantity Theory of Money, University of Chicago Press.

Cohen, Daniel (1985), "How to Evaluate the Solvency of an Indebted Nation." Economic Policy, vol. 1.

Cohen, Daniel (1988), "The Management of Developing Countries' Debt: Guidelines and Applications to Brazil." The World Bank Economic Review, vol. 2, no.2.

Dornbusch, R. and Stanley Fischer (1993), "Moderate Inflation." The World Bank Economic Review, vol. 7, no. 1.

Easterly, W.J. and Stanley Fischer (1990), "The Economics of the Government Budget Constraint." The World Bank Research Observer, vol. 5, no. 2.

Easterly, W.J. and Klaus Schmidt-Hebbel (1993), "Public Sector Deficits and Macroeconomic Performance in Developing Countries." World Bank Research Observer, vol. 8, no. 2.

Elias, V.J. (1990), "The Role of Total Factor Productivity on Economic Growth." Paper prepared for the 1991 World Development Report, World Bank, Washington, D.C.

Friedman, Milton (1971), "Government Revenues from Inflation." Journal of Political Economy, vol. 79, no. 4.

Government of Pakistan, Economic Survey, Ministry of Finance, various years, Islamabad.

Government of Pakistan, State Bank Monthly Bulletin, various issues, Karachi.

Harrison, Ann (1990), "Openness and Growth: A Time Series Cross-Country Analysis for Developing Countries." Paper prepared for the 1991 World Development Report, World Bank, Washington, D.C.

Haque, Nadeem Ul and Peter S. Montiel (1991), "Exchange Rate Policy in Pakistan: Recent Experience and Prospects." Paper presented to the LUMS Conference on Financing Pakistan's Development in the 1990's, LUMS, Lahore.

Haque, Nadeem Ul and Peter S. Montiel (1991), "The Macroeconomics of Public Sector Deficits: The Case of Pakistan." World Bank Working Paper, WPS 673, Washington, D.C.

International Monetary Fund, International Financial Statistics, various years, IMF, Washington, D.C.

Irfan, M. and Aziz Meekal (1985), "Real Wages in Pakistan: Structure and Trends, 1970-84. Pakistan Development Review, vol. XXIV, nos. 3 and 4.

Khan, M. S. and Malcolm D. Knight (1983), "Determinants of Current Account Balances of Non-Oil Developing Countries in the 1970's: An Empirical Analysis." Staff Papers, IMF, vol. 30, no. 9.

Leamer, Edward E. (1988), "Measures of Openness." Trade Policy Issues and Empirical Analysis, edited by Robert E. Baldwin.

Levine, Ross and David Renelt (1991), "Cross Country Studies of Growth and Policy: Methodological, Conceptual and Statistical Problems." World Bank, Washington, D.C.

Lucas, Robert E. (1988), "On the Mechanics of Economic Development." Journal of Monetary Economics, vol. 22, July.

Maddison, Angus (1987), "Growth and Slowdown in Advanced Capitalist Economies." Journal of Economic Literature, vol. XXV, no.2.

Malik, S. J. (1994), "Poverty in Pakistan, 1984-85, 1987-88, and 1990-91." International Food Policy Research Institute, Washington, D.C.

Mankiw, N. G., David Romer and David Weil (1992), "A Contribution to the Empirics of Economic Growth." Quarterly Journal of Economics, May.

Nabi, Ijaz (1984), "Issues in the Economics of Industrialization in Developing Countries: A Case Study from Pakistan's Light Engineering Sector." Pakistan Development Review, vol. xxiii, nos. 2 and 3.

Papanek, Gustav F. (1992), "The Effect of Government Intervention on Growth and Equity: Lessons from Southern Asia." In Louis Putterman and Diwtrich Rueschemeyer, ed., The State and Market in Development: Rivalry or Synergy?

Rebelo, Sergio (1991), "Long Run Policy Analysis and Long Run Growth." Journal of Political Economy, vol. 99, no. 31.

Romer, Paul (1986), "Increasing Returns and Long Run Growth." Journal of Political Economy, vol. 94.

Van Wijnbergen, S. (1989), "External Debt, Inflation and the Public Sector: Toward Fiscal Policy for Sustainable Growth." World Bank Economic Review, vol. 3, no. 3.

World Bank (1987, 1991, 1993), World Tables, Johns Hopkins University Press, Baltimore.

World Bank (1979, 1993), World Development Report, Oxford University Press, New York.

World Bank (1993), The East Asian Miracle: Economic Growth and Public Policy. Policy Research Report, Washington, D.C.

World Bank, World Debt Tables, various years, Washington, D.C.

Annex

Table A1. Data for Aggregate Growth Regressions

	Real GDP at market prices (Rs. billion)	Real Capital Stock (Rs. billion)	Labor Force (million)	Trade Policy (%)	Structural Dummy	• Y
1972	235.17	—	18.94	19.74	0	—
1973	251.92	346.53	19.61	29.55	0	7.12
1974	260.53	369.34	20.12	34.39	0	3.42
1975	271.30	398.62	20.64	32.42	0	4.13
1976	285.60	437.37	21.54	30.83	0	5.27
1977	296.93	477.93	22.48	28.30	0	3.97
1978	320.90	517.01	23.46	27.75	1	8.07
1979	332.70	555.77	24.49	33.44	1	3.68
1980	367.34	601.55	25.07	36.58	1	10.41
1981	396.50	642.12	25.65	35.70	1	7.94
1982	422.30	684.13	26.27	32.16	1	6.51
1983	450.82	731.14	26.91	35.68	1	6.75
1984	473.93	778.45	27.45	35.18	1	5.13
1985	509.82	829.61	28.00	34.00	1	7.57
1986	537.84	885.73	28.05	35.23	1	5.50
1987	572.48	947.79	29.60	35.13	1	6.44
1988	617.10	1008.62	29.93	36.06	1	7.79
1989	646.70	1076.81	30.87	36.35	1	4.80
1990	674.58	1146.49	31.82	39.77	1	4.31
1991	711.76	1218.29	32.81	39.41	1	5.51
1992	771.52	1309.60	33.82	41.50	1	8.40

Data Sources and Notes:

1) Data on GDP obtained from 1993 World Tables, 1987 = 100. 1992 figure estimated by applying growth rate estimated from data obtained from GOP.

2) Real capital stock data estimated by using real investment data provided by GOP, reported in the various World Bank Economic Reports, and applying the perpetual inventory method.

3) Labor Force Data provided by GOP, as reported in the various World Bank Economic Reports.

4) Trade Policy Variable constructed as the ratio of exports plus imports and divided by GDP. Data obtained from World Tables 1993.

Annex

Table A2: Data for Manufacturing Sector Growth Regression

	Real Value Added Manufacturing (Rs. billion)	Real Capital Stock Manufacturing (Rs. billion)	Labor Force in Manufacturing (000)	• MY (%)	• ML (%)	• MK (%)
1972	29.83		2.40			
1973	33.02	44.1	2.54	10.69	5.83	
1974	35.48	47.2	2.66	7.45	4.72	6.92
1975	35.68	52.1	2.80	0.56	5.26	10.49
1976	36.24	61.7	2.95	1.55	5.36	18.33
1977	39.00	73.7	3.11	1.91	5.42	19.43
1978	43.10	86.8	3.28	10.51	5.47	17.90
1979	46.67	99.6	3.46	8.28	5.49	14.73
1980	51.58	112.3	3.47	10.52	0.29	12.75
1981	52.29	122.2	3.48	11.54	0.29	8.80
1982	59.48	130.3	3.49	13.75	0.29	6.63
1983	63.66	139.0	3.50	7.03	0.29	6.65
1984	68.68	148.1	3.61	7.88	3.14	6.58
1985	74.24	155.7	3.73	8.09	3.32	5.12
1986	79.84	165.6	3.62	7.54	- 2.95	6.33
1987	85.85	174.1	4.08	7.53	12.71	5.12
1988	94.42	183.3	3.72	9.98	- 8.82	5.29
1989	98.16	195.9	3.84	3.96	3.22	6.88
1990	107.23	211.2	3.96	9.24	3.13	7.81
1991	113.88	227.5	4.08	6.20	3.03	7.74
1992	122.65	244.75	4.21	7.70	3.18	7.56

Data Sources and Notes: Same as explained in Table A1.

Annex

Table A3: Pakistan -- Analysis of Domestic Debt, 1972-1992

	Total Domestic Debt	Held by SBP	Adjusted Domestic Debt	External Debt	Total Adjusted Debt	Adjusted Debt/ GDP
1972	16.67	8.60	8.07	34.14	39.21	72.5
1973	17.82	8.81	9.01	44.04	53.05	79.3
1974	17.43	7.88	9.55	48.96	58.51	67.4
1975	21.25	9.27	11.98	54.97	66.95	59.6
1976	27.42	12.05	15.37	65.05	80.42	60.9
1977	32.70	15.53	17.17	75.05	92.22	61.6
1978	38.53	16.11	22.42	82.60	105.02	59.5
1979	49.37	24.34	25.03	88.43	113.46	58.2
1980	56.75	25.23	31.52	98.36	129.88	55.2
1981	60.09	25.76	34.35	104.15	138.50	49.8
1982	76.66	34.76	41.90	137.82	179.72	55.4
1983	87.86	27.13	60.73	156.85	217.58	59.7
1984	106.55	35.60	70.95	171.05	242.00	57.6
1985	143.93	54.71	89.22	212.72	301.94	63.9
1986	203.12	59.83	143.29	247.91	391.20	76.0
1987	248.45	55.69	192.76	290.42	483.18	84.4
1988	290.10	81.96	208.14	305.31	513.45	76.0
1989	333.21	90.04	243.07	375.88	618.95	80.4
1990	381.31	110.77	270.54	448.14	718.68	83.9
1991	448.11	132.84	315.32	546.68	862.20	84.3
1992	521.72	158.18	363.54	605.41	968.95	80.6

Data Sources and Notes:

1) Total Domestic Debt data from Ministry of Finance (Economic Survey)

2) Data on debt held by State Bank of Pakistan (SBP) obtained from International Finance Statistics (IFS) and SBP Monthly Bulletin.

3) External Debt data from World Bank Debt Tables

4) GDP from World Tables, 1993

Annex

Table A4: Data for Regression Analysis of Determinant of Current Account Deficit

	Current Account as % of GDP	Fiscal Balance as % of GDP	Terms of Trade	Real Exchange Rate	Foreign Real Interest Rates
1972	- 3.1	- 5.9	122.20	12.80	- 7.05
1973	- 2.0	- 8.2	162.50	15.39	-13.90
1974	- 6.2	- 8.7	125.70	15.12	-20.12
1975	-10.4	-12.9	102.10	13.56	- 9.34
1976	- 7.1	-12.8	104.70	12.10	0.65
1977	- 7.0	-10.9	109.70	11.99	- 7.96
1978	- 3.4	- 9.9	113.90	12.40	-12.89
1979	- 5.7	-11.6	104.80	13.42	-10.82
1980	- 4.8	-10.4	101.60	13.99	- 6.04
1981	- 3.6	- 8.5	99.60	12.24	2.63
1982	- 5.0	- 8.7	95.40	12.91	5.12
1983	- 1.8	-11.1	98.30	13.15	6.36
1984	- 3.2	- 9.9	92.70	12.52	6.28
1985	- 5.4	- 8.7	89.70	13.53	2.92
1986	- 3.9	- 8.1	96.80	15.58	-14.0
1987	- 2.2	- 8.2	100.00	17.90	- 6.15
1988	- 4.4	- 8.5	91.20	17.59	- 3.43
1989	- 4.8	- 7.7	83.90	18.52	4.70
1990	- 4.7	- 6.5	80.00	20.04	- 1.70
1991	- 4.3	- 8.7	80.00	19.22	2.04
1992	- 3.1	- 7.5	75.00	19.21	1.37

Data Sources and Notes:

1) Current account and fiscal balance data from various IMF and World Bank economic reports. Fiscal balance defined as total public sector borrowing requirement.

2) Real exchange rate defined as Rs./$ and deflated by the ratio of domestic CPI to US CPI. Data obtained from International Financial Statistics, IMF.

3) Foreign real interest rate is defined as one year libor adjusted for world inflation (MUV index).

Policy Research Working Paper Series

	Title	Author	Date	Contact for paper
WPS1319	The Financial System and Public Enterprise Reform: Concepts and Cases	Asli Demirgüç-Kunt Ross Levine	July 1994	B. Moore 35261
WPS1320	Capital Structures in Developing Countries: Evidence from Ten Countries	Asli Demirgüç-Kunt Vojislav Maksimovic	July 1994	B. Moore 35261
WPS1321	Institutions and the East Asian Miracle: Asymmetric Information, Rent-Seeking, and the Deliberation Council	Jose Edgardo Campos Donald Lien	July 1994	B. Moore 35261
WPS1322	Reducing Regulatory Barriers to Private-Sector Participation in Latin America's Water and Sanitation Services	Barbara Richard Thelma Triche	July 1994	M. Dhokai 33970
WPS1323	Energy Pricing and Air Pollution: Econometric Evidence from Manufacturing in Chile and Indonesia	Gunnar S. Eskeland Emmanuel Jimenez Lili Liu	July 1994	C. Jones 37699
WPS1324	Voucher Funds in Transitional Economies: The Czech and Slovak Experience	Robert E. Anderson	July 1994	F. Hatab 35835
WPS1325	The Economics of Research and Development: How Research and Development Capital Affects Production and Markets and Is Affected by Tax Incentives	Anwar Shah	July 1994	C. Jones 37699
WPS1326	Banks, Capital Markets, and Corporate Governance: Lessons from Russia for Eastern Europe	Gerhard Pohl Stijn Claessens	July 1994	L. Hovsepian 37297
WPS1327	Is the Debt Crisis History? Recent Private Capital Inflows to Developing Countries	Michael Dooley Eduardo Fernandez-Arias Kenneth Kletzer	July 1994	S. King-Watson 31047
WPS1328	The Use of New York Cotton Futures Contracts to Hedge Cotton Price Risk in Developing Countries	Panos Varangis Elton Thigpen Sudhakar Satyanarayan	July 1994	D. Gustafson 33714
WPS1329	The Regulation and Supervision of Domestic Financial Conglomerates	David H. Scott	August 1994	K. Waelti 37655
WPS1330	Revenue Uncertainty and the Choice of Tax Instrument during the Transition in Eastern Europe	Delfin S. Go	August 1994	C. Jones 37699

Policy Research Working Paper Series

	Title	Author	Date	Contact for paper
WPS1331	The Myth of Monopoly: A New View of Industrial Structure in Russia	Annette N. Brown Barry W. Ickes Randi Ryterman	August 1994	M. Berg 36969
WPS1332	Poverty and Household Size	Peter Lanjouw Martin Ravallion	August 1994	P. Cook 33902
WPS1333	A Test of the International Convergence Hypothesis Using Panel Data	Norman V. Loayza	August 1994	R. Martin 39026
WPS1334	Taxation, Public Services, and the Informal Sector in a Model of Endogenous Growth	Juan Braun Norman V. Loayza	August 1994	R. Martin 39026
WPS1335	Labor Regulations and the Informal Economy	Norman V. Loayza	August 1994	R. Martin 39026
WPS1336	Modernizing Payment Systems in Emerging Economies	Robert Listfield Fernando Montes-Negret	August 1994	F. Montes-Negret 37832
WPS1337	The Countrywide Effects of Aid	Howard White Joke Luttik	August 1994	E. Khine 37471
WPS1338	Commodity Exports and the Adding-Up Problem in Developing Countries: Trade, Investment, and Lending Policy	Maurice Schiff	August 1994	A. Kim 33715
WPS1339	China's Emergence: PRospects, Opportunities, and Challenges	Andres Boltho Uri Dadush Dong He Shigeru Otsubo	August 1994	J. Queen 33740
WPS1340	Opportunity Cost and Prudentiality: An Analysis of Futures Clearinghouse Behavior	Herbert L. Baer Virginia G. France James T. Moser	August 1994	
WPS1341	Explaining Pakistan's High Growth Performance Over the Past Two Decades: Can It Be Sustained?	Sadiq Ahmed	August 1994	A. Bhalla 84440
WPS1342	Winners and Losers in Transition: Returns to Education, Experience, and Gender in Slovenia	Peter F. Orazem Milan Vodopivec	August 1994	